Figure 1

Glucose growth and long-term starvation and multiplexed data aquistion

Figure 2

A
RNA Cluster Centroids
Cluster Number
log10(t/t0)
B
Protein Cluster Centroids
log10(t/t0)
C
Protein vs. RNA(t)dt
P(ρ)
Correlation Coefficient
D
Protein vs. RNA
P(ρ)
Correlation Coefficient
E
ρ (Protein vs. RNA(t)dt)
ρ (Protein vs. RNA)
F
Absolute abundance at T=3hr
ρ=0.73
log10(protein/<protein>)
log10(RNA/<RNA>)

Figure 3

A
RNA intra-operon correlation
P(<ρi,j>)
mean correlation coefficient (<ρi,j>)
B
Protein intra-operon correlation
P(<ρi,j>)
mean correlation coefficient (<ρi,j>)
C
Intra-Operon organization
Pairwise protein profile correlation coeffecient
inter-gene distance (kbp)
D
Protein
glpA
glpB
Relative Expression
time(hr)
E
Protein
pspA
pspB
pspC
pspD
Relative Expression
time(hr)
F
RNA
yacC
speE
Relative Expression
time(hr)

Figure 4

A
Function to Fit
t0
t1
t2
t3
t4
t5
B
ybbO
RNA (Relative)
time(hr)
C
ygdD
RNA (Relative)
time(hr)
D
mutM
RNA (Relative)
time(hr)
E
ycbR
RNA (Relative)
time(hr)
F
Time to First Inflection
P(t1)
t1(hr)

Figure 5

A
RNA down regulated
translation
cellular cell wall macromolecule metabolic process
nitrogen compound biosynthetic process
aerobic respiration
nitrogen compound biosynthetic process
mean in GO
time(hr)
B
RNA up regulated
carbohydrate catabolic process
mean in GO
time(hr)
C
Protein up regulated
lipid modification
carbohydrate catabolic process
response to osmotic stress
glycerol metabolic process
iron ion transport
mean in GO
time(hr)
D
Protein down regulated
translation
cellular cell wall macromolecule metabolic process
locomotory behavior
RNA modification
DNA-dependent DNA replication
cell cycle
mean in GO
time(hr)
E
All proteins in a Kegg pathway
Flagellar assembly
Biotin metabolism
Streptomycin biosynthesis
Methane metabolism
RNA degradation
Aminoacyl-tRNA biosynthesis
Selenoamino acid synthesis
Mean of proteins in Kegg pathway
time(hr)
F
All proteins in a Kegg pathway
Biosynthesis of siderophore group nonribosomal peptides
Inositol phosphate metabolism
Metabolism of xenobiotics by cytochrome P450
Tyrosine metabolism
Mean of proteins in Kegg pathway
time(hr)

Figure 6

A
SER from GLY
B
PYR from MAL upper branch
C
PEP through TK upper branch
D
PEP through PPP upper branch
E
PEP from OAA
F
OAA from PEP
G
P5P from G6P lower branch
ρrna=0.55 , ρprotein=0.85
H
E4P through TK
I
GLY from SER
Flux Ratio
time (hr)

Figure 8

A
Exact mass: 1797.2
Exact mass: 2035.5
B
CFA synthase
Protein
RNA
relative expression
time(hr)
C
6 hours
1797.5
1769.4
1716.5
1877.4
Relative Abundance (%)
m/z
2 weeks
1797.3
2034.5
1768.3
1716.3
1819.3
m/z
D
6 hours
688.5175
662.4987
689.5207
716.5506
742.5703
Intensity
2 weeks
702.5352
662.4991
688.5177
703.5383
716.5518
730.5677
Intensity

Table 1

Publication	N proteins found	Cutoff	Method	#RNAs	Cutoff	Method
This study	2648 * (at 3hrs)	FDR<1%	Shotgun MS	4116 genes,89 sRNA, 85 tRNA (at 3hrs)	?	RNA-seq
Yoon et al. 2012	60	fold change>2	2-D gel	4144 gene probes (REL606 strain)	NA	Microarray
Taniguch et al.i 2012	1018	NA	YFP fusion	137	95% confidence	FISH
Lewis et al. 2010	~1,000	P-value<0.05	Shotgun MS			
Lewis et al. 2009				4428 gene probes	NA	Microarray
Soares et al. 2013	2053*	FDR<1%	SILAC			
Wisniewski and Rakus, 2014	2200	FDR<1%	FASP			
Raghavan et al. 2011				Genes: 4161, 133 sRNA	%region mapped ≥50%	RNA-seq

*The criteria that Soares et al. use for a protein being observed is that it apear in at least 1 of 2 biological repeats. We use a criteria that it apear in 1 of 3 biological repeats.

Figure 1- supplemental figure 1

Figure 2 - supplemental figure 1

Figure 4- supplemental figure 1

Proportionally controlled proteins	
Enrichment Score: 15.722412271963268	
Term	FDR
GO:0018198~peptidyl-cysteine modification	3.219E-13
GO:0018197~peptidyl-aspartic acid modification	3.219E-13
GO:0018339~peptidyl-L-beta-methylthioaspartic acid biosynthetic process from peptidyl-aspartic acid	3.219E-13
Enrichment Score: 5.177276313087028	
Term	FDR
GO:0044271~nitrogen compound biosynthetic process	0.00
GO:0046394~carboxylic acid biosynthetic process	0.01
GO:0016053~organic acid biosynthetic process	0.01
GO:0009309~amine biosynthetic process	0.02
GO:0008652~cellular amino acid biosynthetic process	0.05
Enrichment Score: 5.0019785746451575	
Term	FDR
GO:0007049~cell cycle	0.00
GO:0051301~cell division	0.02
GO:0007059~chromosome segregation	0.15
Enrichment Score: 3.7902178093615957	
Term	FDR
GO:0042330~taxis	4.03E-4
GO:0007610~behavior	4.03E-4
GO:0007626~locomotory behavior	4.03E-4
GO:0048870~cell motility	0.20
GO:0001539~ciliary or flagellar motility	0.20
GO:0051674~localization of cell	0.20
GO:0006928~cell motion	0.22
GO:0043064~flagellum organization	4.11
GO:0030030~cell projection organization	10.53
GO:0009296~flagellum assembly	73.89
GO:0030031~cell projection assembly	90.39
Enrichment Score: 3.136632364510789	
Term	FDR
GO:0006790~sulfur metabolic process	0.04
GO:0009070~serine family amino acid biosynthetic process	0.29
GO:0044272~sulfur compound biosynthetic process	0.56
GO:0009069~serine family amino acid metabolic process	0.70
GO:0000097~sulfur amino acid biosynthetic process	0.91
GO:0000096~sulfur amino acid metabolic process	2.11
GO:0019344~cysteine biosynthetic process	8.05
GO:0006534~cysteine metabolic process	22.87
Enrichment Score: 2.968167724937097	
Term	FDR
GO:0006418~tRNA aminoacylation for protein translation	0.02
GO:0043038~amino acid activation	0.02
GO:0043039~tRNA aminoacylation	0.02
GO:0006399~tRNA metabolic process	0.04
GO:0034660~ncRNA metabolic process	0.14
GO:0009451~RNA modification	2.42
GO:0006400~tRNA modification	53.53
GO:0008033~tRNA processing	87.59
GO:0034470~ncRNA processing	87.90
GO:0006396~RNA processing	89.71

Integrally controlled proteins	
Enrichment Score: 3.2079342112759694	
Term	FDR
GO:0006071~glycerol metabolic process	8.67E-05
GO:0019400~alditol metabolic process	2.08E-03
GO:0019751~polyol metabolic process	2.26E-03
GO:0006072~glycerol-3-phosphate metabolic process	3.83E-01
GO:0045333~cellular respiration	4.55E+01
GO:0019637~organophosphate metabolic process	7.43E+01
GO:0006796~phosphate metabolic process	9.95E+01
GO:0006793~phosphorus metabolic process	9.98E+01

Com	Entrez ID	Gene Name	Prediction	Sorted Category
ispD	948269	2-C-methyl-D-erythritol 4-phosphate cytidylyltransferase		Temporarly Up Regulate
dxr	945019	1-deoxy-D-xylulose 5-phosphate reductoisomerase		Down Regulated
rbsB	948261	D-ribose-binding periplasmic protein		Up Regulated
rbsC	948262	Ribose transport system permease protein rbsC		Ambiguous/Unsorted
yieP	948263	Uncharacterized HTH-type transcriptional regulator yieP	[]	Down Regulated
fucU	945842	L-fucose mutarotase		Up Regulated
hemE	945017	Delta-aminolevulinic acid dehydratase		Ambiguous/Unsorted
tonB	945843	Protein tonB		Ambiguous/Unsorted
rbsA	948264	Ribose import ATP-binding protein rbsA; Ribose import ATP-binding protein rbsA 1		Ambiguous/Unsorted
rluB	945840	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase B		Down Regulated
rbsR	948266	Ribose operon repressor		Down Regulated
kch	945841	Putative potassium channel protein		Ambiguous/Unsorted
rbsD	948267	D-ribose pyranase		Ambiguous/Unsorted
dnaC	948864	DNA replication protein dnaC		Ambiguous/Unsorted
ydcI	948865	Uncharacterized HTH-type transcriptional regulator ydcI	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depende	Down Regulated
btuR	945839	Cob(I)yrinic acid a,c-diamide adenosyltransferase		Ambiguous/Unsorted
hsdS	948867	Type-1 restriction enzyme EcoKI specificity protein		Down Regulated
adhE	945837	Aldehyde-alcohol dehydrogenase		Down Regulated
rbsK	948260	Ribokinase		Ambiguous/Unsorted
nadC	948869	Nicotinate-nucleotide pyrophosphorylase [carboxylating]		Ambiguous/Unsorted
ychE	945836	UPF0056 membrane protein yhcE		Temporarly Up Regulate
dosC	945835	Diguanylate cyclase yddV		Up Regulated
yddV	945835	Diguanylate cyclase yddV		Up Regulated
tauD	945021	Alpha-ketoglutarate-dependent taurine dioxygenase		Down Regulated
dinI	945022	DNA-damage-inducible protein I		Down Regulated
yccK	945023	Sulfurtransferase tusE		Ambiguous/Unsorted
mutH	947299	DNA mismatch repair protein mutH		Up Regulated
yieL	948272	Uncharacterized protein yieL	['Carbohydrate transport and metabolism']	Temporarly Up Regulate
yahF	947298	Uncharacterized protein yahF	['Amino acid transport and metabolism', ' Carbon compound utilization', 'amino acid metabolic process']	Temporarly Up Regulate
tdk	945834	Thymidine kinase		Ambiguous/Unsorted
ilvE	948278	Branched-chain-amino-acid aminotransferase		Ambiguous/Unsorted
smpB	947296	SsrA-binding protein		Down Regulated
ilvM	948279	Acetolactate synthase isozyme 2 small subunit		Down Regulated
amiC	947293	N-acetylmuramoyl-L-alanine amidase amiC		Down Regulated
tauB	945027	Taurine import ATP-binding protein tauB		Ambiguous/Unsorted
recC	947294	Exodeoxyribonuclease V gamma chain		Down Regulated
hns	945829	DNA-binding protein H-NS		Up Regulated
ylaC	948876	Inner membrane protein ylaC		Down Regulated
ygdL	947291	Uncharacterized protein ygdL	[]	Down Regulated
csdL	947291	Uncharacterized protein ygdL		Down Regulated
ychJ	945828	UPF0225 protein ychJ		Down Regulated
ampD	948877	1,6-anhydro-N-acetylmuramyl-L-alanine amidase ampD		Temporarly Up Regulate
arcA	948874	Aerobic respiration control protein arcA		Ambiguous/Unsorted
hsdR	948878	Type I restriction enzyme EcoKI R protein		Down Regulated
ygeW	945826	Uncharacterized protein ygeW	[' Central intermediary metabolism']	Temporarly Down Regula
hsdM	948872	Type I restriction enzyme EcoKI M protein		Down Regulated
rstB	948870	Sensor protein; Sensor protein rstB		Down Regulated
tauA	945030	Taurine-binding periplasmic protein		Down Regulated
atpF	948247	ATP synthase subunit b; ATP synthase B chain		Up Regulated
yaiI	945033	UPF0178 protein yaiI		Temporarly Up Regulate
mnm	948248	tRNA uridine 5-carboxymethylaminomethyl modification enzyme mnmG		Down Regulated
aroL	945031	Shikimate kinase 2		Ambiguous/Unsorted
mioC	948249	Protein mioC		Ambiguous/Unsorted
rlmM	947283	UTI89_C3178; b2806; ECIAI39_3228; ECIAI1_2916; Z4123; c3376; ECED1_3259; ECUMN_3135; E2348C_3073; APECO1_3725; ECS88_3075; EC55989_3085; ECDH10B_2975		Down Regulated
ygdE	947283	UTI89_C3178; b2806; ECIAI39_3228; ECIAI1_2916; Z4123; c3376; ECED1_3259; ECUMN_3135; E2348C_3073; APECO1_3725; ECS88_3075; EC55989_3085; ECDH10B_2975		Down Regulated
atpD	948244	ATP synthase subunit beta		Up Regulated
yaiW	945038	Uncharacterized protein yaiW	[' Carbon compound utilization', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcriptio	Temporarly Up Regulate
ptrA	947284	Protease 3		Ambiguous/Unsorted
suhB	947285	Inositol-1-monophosphatase		Temporarly Down Regula
recB	947286	Exodeoxyribonuclease V beta chain		Up Regulated
RecD	947287	Exodeoxyribonuclease V alpha chain		Down Regulated
pstB	948240	Phosphate import ATP-binding protein pstB		Ambiguous/Unsorted
oppB	945823	Oligopeptide transport system permease protein oppB		Down Regulated
cls	945821	Cardiolipin synthetase		Up Regulated

argA	947289	Amino-acid acetyltransferase		Ambiguous/Unsorted
rsmE	945816	Ribosomal RNA small subunit methyltransferase E		Ambiguous/Unsorted
Dos	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Ambiguous/Unsorted
dosP	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Ambiguous/Unsorted
ygiT	945814	Uncharacterized HTH-type transcriptional regulator ygiT	[' Carbon compound utilization', 'metabolic process']	Up Regulated
mqsA	945814	Uncharacterized HTH-type transcriptional regulator ygiT		Up Regulated
flgD	945813	Basal-body rod modification protein flgD		Ambiguous/Unsorted
oppF	945818	Oligopeptide transport ATP-binding protein oppF		Ambiguous/Unsorted
flhC	947280	Flagellar transcriptional activator flhC		Down Regulated
sgcX	948840	Putative sgc region protein sgcX		Up Regulated
psiF	945040	Phosphate starvation-inducible protein psiF		Up Regulated
phoA	945041	Alkaline phosphatase		Ambiguous/Unsorted
yaiA	945043	Uncharacterized protein yaiA	['Amino acid transport and metabolism', ' Building block biosynthesis', 'aromatic amino acid family biosynthetic process']	Up Regulated
asnA	948258	Aspartate--ammonia ligase		Ambiguous/Unsorted
phoR	945044	Sensor protein; Phosphate regulon sensor protein phoR		Ambiguous/Unsorted
aroM	945045	Protein aroM		Down Regulated
asnC	948259	Asparaginyl-tRNA synthetase; Regulatory protein asnC		Down Regulated
ravA	948256	ATPase ravA		Temporarly Down Regula
phoB	945046	Phosphate regulon transcriptional regulatory protein phoB		Temporarly Up Regulated
csdE	947274	Uncharacterized sufE-like protein ygdK		Ambiguous/Unsorted
yaiE	945048	UPF0345 protein yaiE		Down Regulated
syd	947271	Protein syd		Down Regulated
sbcD	945049	Nuclease sbcCD subunit D		Temporarly Up Regulated
kup	948255	Low affinity potassium transport system protein kup		Ambiguous/Unsorted
atpB	948252	ATP synthase subunit a		Down Regulated
gcvA	947278	Glycine cleavage system transcriptional activator		Temporarly Up Regulated
ygdI	947276	Uncharacterized lipoprotein ygdI	[' Carbon compound utilization', ' RNA related', ' Type of regulation', ' Genetic unit regulated']	Up Regulated
uxuR	948849	Uxu operon transcriptional regulator		Temporarly Up Regulated
oppD	945802	Oligopeptide transport ATP-binding protein oppD		Ambiguous/Unsorted
ycgN	945804	UPF0260 protein ycgN		Down Regulated
glcB	948857	Malate synthase G		Up Regulated
narJ	945807	Respiratory nitrate reductase 1 delta chain		Up Regulated
gudP	947265	Probable glucarate transporter		Temporarly Down Regula
ilvH	947267	Acetolactate synthase isozyme 3 small subunit		Ambiguous/Unsorted
tnaB	948220	Low affinity tryptophan permease		Temporarly Up Regulated
mnmI	948222	tRNA modification GTPase mnmE		Temporarly Down Regula
rumB	947260	23S rRNA (uracil-5-)-methyltransferase rumB		Ambiguous/Unsorted
wrbA	947263	Flavoprotein wrbA; Putative flavoprotein wrbA		Up Regulated
sdaB	947262	L-serine dehydratase 2		Up Regulated
yieE	948226	Uncharacterized protein yieE	['Amino acid transport and metabolism']	Temporarly Down Regula
yieF	948225	Uncharacterized protein yieF		Up Regulated
yidZ	948227	HTH-type transcriptional regulator yidZ		Up Regulated
yieK	948229	Uncharacterized protein yieK	['Carbohydrate transport and metabolism']	Temporarly Up Regulated
ygdG	947256	Uncharacterized exonuclease xni		Temporarly Up Regulated
barA	947255	Sensor protein; Signal transduction histidine-protein kinase barA		Ambiguous/Unsorted
mazG	947254	Protein mazG		Down Regulated
pepN	947253	Aminopeptidase N		Ambiguous/Unsorted
mazF	947252	PemK-like protein 1		Temporarly Up Regulated
nhoA	947251	N-hydroxyarylamine O-acetyltransferase		Ambiguous/Unsorted
bglB	948234	6-phospho-beta-glucosidase bglB		Ambiguous/Unsorted
phoU	948233	Phosphate transport system protein phoU		Ambiguous/Unsorted
yieH	948232	Phosphatase yieH		Down Regulated
pstS	948237	Phosphate-binding protein pstS		Up Regulated
gudD	947258	Glucarate dehydratase		Ambiguous/Unsorted
qmcA	947257	Protein qmcA		Temporarly Up Regulated
ibpA	948200	Small heat shock protein ibpA		Down Regulated
CYBE	947241	Cytochrome b561		Down Regulated
ygcR	947240	Putative electron transfer flavoprotein subunit ygcR		Down Regulated
rumA	947243	23S rRNA (uracil-5-)-methyltransferase rumA		Temporarly Down Regula
mazE	947245	PemI-like protein 1		Ambiguous/Unsorted
relA	947244	GTP pyrophosphokinase		Ambiguous/Unsorted
ybdK	947246	Carboxylate-amine ligase ybdK		Up Regulated
ygiC	947249	Uncharacterized protein ygiC	[]	Down Regulated
recF	948209	DNA replication and repair protein recF		Temporarly Up Regulated
ydcL	948203	Uncharacterized lipoprotein ydcL	['Amino acid transport and metabolism', 'amino acid transport']	Up Regulated

yjiA	948882	Uncharacterized GTP-binding protein yjiA	[]	Ambiguous/Unsorted
opgB	948888	Phosphoglycerol transferase I		Down Regulated
yjjA	948887	Uncharacterized protein yjjA	[]	Down Regulated
cusR	945003	Transcriptional regulatory protein cusR		Temporarly Down Regula
yidB	948212	Uncharacterized protein yidB	[]	Up Regulated
pal	945004	Peptidoglycan-associated lipoprotein		Up Regulated
yegD	947234	Uncharacterized chaperone protein yegD	[]	Temporarly Up Regulated
lacI	945007	Lactose operon repressor		Ambiguous/Unsorted
lacZ	945006	Beta-galactosidase		Down Regulated
hisQ	947235	Histidine transport system permease protein hisQ		Down Regulated
dnaN	948218	DNA polymerase III subunit beta		Down Regulated
dnaA	948217	Chromosomal replication initiator protein dnaA		Up Regulated
rpmH	948216	50S ribosomal protein L34		Up Regulated
rnpA	948215	Ribonuclease P protein component		Temporarly Down Regula
cynR	945001	HTH-type transcriptional regulator cynR		Up Regulated
cysJ	947239	Sulfite reductase [NADPH] flavoprotein alpha-component		Down Regulated
osmY	948895	Osmotically-inducible protein Y		Up Regulated
rimI	948894	Ribosomal-protein-alanine acetyltransferase		Ambiguous/Unsorted
fhuF	948891	Ferric iron reductase protein fhuF		Temporarly Up Regulated
holD	948890	DNA polymerase III subunit psi		Temporarly Up Regulated
yjjG	948899	5'-nucleotidase yjjG		Down Regulated
mrr	948898	Mrr restriction system protein		Ambiguous/Unsorted
prfC	948897	Peptide chain release factor 3		Temporarly Down Regula
lpp	946175	Major outer membrane lipoprotein		Up Regulated
entB	946178	Isochorismatase		Up Regulated
ydhR	946177	Putative monooxygenase ydhR		Down Regulated
ynhG	946174	Uncharacterized protein ynhG	[]	Ambiguous/Unsorted
slyA	946167	Transcriptional regulator slyA		Temporarly Down Regula
plsX	946165	Fatty acid/phospholipid synthesis protein plsX		Ambiguous/Unsorted
pdxY	946162	Pyridoxamine kinase		Down Regulated
rsxG	946158	Electron transport complex protein rnfG		Ambiguous/Unsorted
rnt	946159	Ribonuclease T		Ambiguous/Unsorted
uidR	946150	HTH-type transcriptional regulator uidR		Down Regulated
cnu	946152	OriC-binding nucleoid-associated protein		Up Regulated
hdhA	946151	7-alpha-hydroxysteroid dehydrogenase		Down Regulated
lhr	946156	Probable ATP-dependent helicase lhr		Down Regulated
uidA	946149	Beta-glucuronidase		Ambiguous/Unsorted
fumC	946147	Fumarate hydratase class II		Temporarly Down Regula
rsxB	946146	Electron transport complex protein rnfB		Down Regulated
topB	946141	DNA topoisomerase 3		Temporarly Up Regulated
yceI	946145	Protein yceI		Ambiguous/Unsorted
pntB	946144	NAD(P) transhydrogenase subunit beta		Ambiguous/Unsorted
fecC	948826	Fe(3+) dicitrate transport system permease protein fecC		Temporarly Up Regulated
fecE	948819	Fe(3+) dicitrate transport ATP-binding protein fecE		Up Regulated
yfcZ	948817	UPF0381 protein yfcZ		Up Regulated
sspA	944744	Stringent starvation protein A		Ambiguous/Unsorted
yjgB	948802	Uncharacterized zinc-type alcohol dehydrogenase-like protein y	['Amino acid transport and metabolism', ' Carbon compound utilization', 'metabolic process']	Up Regulated
ydiI	946190	Esterase ydiI		Up Regulated
ybaQ	948800	Uncharacterized HTH-type transcriptional regulator ybaQ	['Energy production and conversion', ' Energy production transport', 'electron transport', 'amino acid metabolic process']	Temporarly Down Regula
yddH	946192	Uncharacterized protein yddH	[]	Up Regulated
sapB	946191	Peptide transport system permease protein sapB		Temporarly Down Regula
ygcE	946193	Uncharacterized sugar kinase ygcE	[' Central intermediary metabolism', 'carbohydrate metabolic process']	Temporarly Up Regulated
trxA	948289	Thioredoxin-1		Up Regulated
ydiH	946194	Uncharacterized protein ydiH	['proteolysis']	Up Regulated
fucI	946195	L-fucose isomerase		Up Regulated
ilvA	948287	Threonine dehydratase biosynthetic		Ambiguous/Unsorted
ppiC	948285	Peptidyl-prolyl cis-trans isomerase C		Ambiguous/Unsorted
rstA	946199	Transcriptional regulatory protein rstA		Temporarly Up Regulated
gpp	948291	Guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase		Down Regulated
rep	948292	ATP-dependent DNA helicase rep		Down Regulated
wzyE	948293	Putative ECA polymerase		Down Regulated
ydiL	946181	Uncharacterized protein ydiL	[]	Temporarly Up Regulated
ydhZ	946180	Uncharacterized protein ydhZ	[]	Up Regulated
rffH	948299	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 2		Temporarly Down Regula
sufS	946185	Cysteine desulfurase		Up Regulated

torR	946182	TorCAD operon transcriptional regulatory protein torR		Temporarly Up Regulated
ydiJ	946189	Uncharacterized protein ydiJ	['Energy production and conversion']	Ambiguous/Unsorted
rffA	948296	Lipopolysaccharide biosynthesis protein rffA		Down Regulated
ybaS	946187	Glutaminase 1		Up Regulated
puuA	946202	Gamma-glutamylputrescine synthetase		Down Regulated
lnt	946201	Apolipoprotein N-acyltransferase		Ambiguous/Unsorted
sapD	946203	Peptide transport system ATP-binding protein sapD		Down Regulated
yadD	944781	Uncharacterized protein yadD	['Replication recombination and repair', 'DNA recombination']	Down Regulated
appA	946206	Periplasmic appA protein		Up Regulated
ydiA	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA	[]	Down Regulated
ppsR	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA		Down Regulated
mdtB	946606	Multidrug resistance protein mdtB		Up Regulated
mdtC	946608	Multidrug resistance protein mdtC		Ambiguous/Unsorted
rffE	944789	UDP-N-acetylglucosamine 2-epimerase		Ambiguous/Unsorted
yegQ	946609	Uncharacterized protease yegQ	[]	Down Regulated
ydiB	946200	Quinate/shikimate dehydrogenase		Temporarly Up Regulated
ftsZ	944786	Cell division protein ftsZ		Down Regulated
baeS	946611	Sensor protein; Signal transduction histidine-protein kinase baeS		Down Regulated
ybiS	945441	Uncharacterized protein ybiS	['phosphoenolpyruvate dependent sugar phosphotransferase system']	Ambiguous/Unsorted
ybiT	945440	Uncharacterized ABC transporter ATP-binding protein ybiT	[]	Ambiguous/Unsorted
flhD	945442	Transcriptional activator flhD		Down Regulated
puuE	945446	4-aminobutyrate aminotransferase		Down Regulated
ydcF	946215	Protein ydcF		Ambiguous/Unsorted
fadK	946213	Short-chain-fatty-acid--CoA ligase		Ambiguous/Unsorted
mltC	945428	Membrane-bound lytic murein transglycosylase C		Temporarly Up Regulated
ydiS	946212	Probable electron transfer flavoprotein-quinone oxidoreductase ydiS		Temporarly Down Regula
folA	944790	Dihydrofolate reductase; Dihydrofolate reductase type 1		Ambiguous/Unsorted
ydiU	946219	UPF0061 protein ydiU		Down Regulated
ydiY	946218	Uncharacterized protein ydiY	[]	Up Regulated
murE	944791	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate--2,6-diaminopimelate ligase		Ambiguous/Unsorted
lpxL	946216	Lipid A biosynthesis lauroyl acyltransferase		Up Regulated
rihC	944796	Non-specific ribonucleoside hydrolase rihC		Up Regulated
leuB	944798	3-isopropylmalate dehydrogenase		Temporarly Down Regula
aroD	946210	3-dehydroquinate dehydratase		Down Regulated
aceK	944797	Isocitrate dehydrogenase kinase/phosphatase		Down Regulated
ftsI	944799	Peptidoglycan synthetase ftsI		Down Regulated
yegE	946600	Uncharacterized protein yegE	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'regulation of tra	Temporarly Up Regulated
mdtA	946604	Multidrug resistance protein mdtA		Up Regulated
ybiI	945434	Uncharacterized protein ybiI	[' Adaptation to stress']	Up Regulated
ybiJ	945433	Uncharacterized protein ybiJ	[]	Temporarly Up Regulated
pps	946209	Phosphoenolpyruvate synthase		Ambiguous/Unsorted
ppsA	946209	Phosphoenolpyruvate synthase		Ambiguous/Unsorted
dinG	945431	Probable ATP-dependent helicase dinG		Down Regulated
mntR	945437	Transcriptional regulator mntR		Ambiguous/Unsorted
glnQ	945435	Glutamine transport ATP-binding protein glnQ		Down Regulated
dapB	944762	Dihydrodipicolinate reductase		Ambiguous/Unsorted
Mog	944760	Molybdopterin biosynthesis mog protein		Up Regulated
rpsT	944759	30S ribosomal protein S20		Down Regulated
nhaR	944757	Transcriptional activator protein nhaR		Ambiguous/Unsorted
rhlE	945425	Putative ATP-dependent RNA helicase rhlE		Down Regulated
ybiB	945424	Uncharacterized protein ybiB	[' Energy metabolism carbon ', 'nitrate assimilation']	Ambiguous/Unsorted
ybiH	945421	Uncharacterized HTH-type transcriptional regulator ybiH	['Defense mechanisms', ' Primary Active Transporters']	Up Regulated
exbB	945420	Biopolymer transport protein exbB		Temporarly Up Regulated
apaH	944770	Bis(5'-nucleosyl)-tetraphosphatase, symmetrical; Bis(5'-nucleosyl)-tetraphosphatase [symmetrical]		Ambiguous/Unsorted
ftsA	944778	Cell division protein ftsA		Ambiguous/Unsorted
ispH	944777	4-hydroxy-3-methylbut-2-enyl diphosphate reductase		Ambiguous/Unsorted
apaG	944772	Protein apaG		Up Regulated
sspB	944774	Stringent starvation protein B		Down Regulated
rpmD	947797	50S ribosomal protein L30		Down Regulated
secY	947799	Preprotein translocase subunit secY; Preprotein translocase secY subunit		Down Regulated
rplO	947798	50S ribosomal protein L15		Down Regulated
rpsD	947793	30S ribosomal protein S4		Temporarly Up Regulated
rpsK	947792	30S ribosomal protein S11		Down Regulated
rpsE	947795	30S ribosomal protein S5		Ambiguous/Unsorted
ybhG	945414	UPF0194 membrane protein ybhG		Up Regulated

ybhF	945413	Uncharacterized ABC transporter ATP-binding protein ybhF		Temporarly Up Regulated
rpsM	947791	30S ribosomal protein S13; 30S ribosomal protein		Down Regulated
yehI	946649	Uncharacterized protein yehI	['Translation ribosomal structure and biogenesis', 'translation', 'ion transport']	Up Regulated
metC	946240	Cystathionine beta-lyase metC		Ambiguous/Unsorted
ybdG	946243	Uncharacterized protein ybdG	[]	Ambiguous/Unsorted
fiu	946246	Catecholate siderophore receptor fiu		Up Regulated
rlmN	946249	Ribosomal RNA large subunit methyltransferase N		Down Regulated
rimN	947783	Putative ribosome maturation factor rimN		Up Regulated
SDHA	945402	Succinate dehydrogenase flavoprotein subunit		Ambiguous/Unsorted
ybhR	945403	Inner membrane transport permease ybhR		Temporarly Up Regulated
rplQ	947784	50S ribosomal protein L17		Temporarly Down Regula
yrdD	947782	Uncharacterized protein yrdD	['Replication recombination and repair', 'amino acid biosynthetic process', 'aromatic amino acid family biosynthetic process']	Up Regulated
dld	946653	D-lactate dehydrogenase		Ambiguous/Unsorted
mscL	947787	Large-conductance mechanosensitive channel		Temporarly Up Regulated
trkA	947788	Trk system potassium uptake protein trkA		Up Regulated
yhdN	947785	Uncharacterized protein yhdN	[]	Down Regulated
zntR	947786	HTH-type transcriptional regulator zntR		Down Regulated
yeiE	946657	Uncharacterized HTH-type transcriptional regulator yeiE	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
yegW	946639	Uncharacterized HTH-type transcriptional regulator yegW	[]	Temporarly Up Regulated
astC	946255	Succinylornithine transaminase		Up Regulated
spy	946253	Spheroplast protein Y		Temporarly Up Regulated
astB	946259	N-succinylarginine dihydrolase		Up Regulated
lptE	946257	LPS-assembly lipoprotein lptE		Ambiguous/Unsorted
yrdB	947774	Uncharacterized protein yrdB	[' Building block biosynthesis', 'purine nucleotide biosynthetic process', 'aromatic amino acid family biosynthetic process']	Temporarly Down Regula
yrdA	947775	Protein yrdA		Ambiguous/Unsorted
aroE	947776	Shikimate dehydrogenase; Quinate/shikimate dehydrogenase		Up Regulated
pncB	946648	Nicotinate phosphoribosyltransferase		Down Regulated
rihB	946646	Pyrimidine-specific ribonucleoside hydrolase rihB		Temporarly Up Regulated
mrp	946627	Protein mrp		Down Regulated
pntA	946628	NAD(P) transhydrogenase subunit alpha		Up Regulated
helD	946227	Helicase IV		Down Regulated
pheS	946223	Phenylalanyl-tRNA synthetase alpha chain		Ambiguous/Unsorted
ycgL	946226	UPF0745 protein ycgL		Ambiguous/Unsorted
aaeR	947760	HTH-type transcriptional activator aaeR		Up Regulated
acrF	947768	Acriflavine resistance protein F		Temporarly Up Regulated
yhdW	947766	Putative amino-acid ABC transporter-binding protein yhdW		Up Regulated
yegU	946630	Uncharacterized protein yegU	[]	Ambiguous/Unsorted
yhdZ	947763	Uncharacterized amino-acid ABC transporter ATP-binding protein yhdZ		Down Regulated
yhdY	947764	Inner membrane amino-acid ABC transporter permease protein yhdY		Up Regulated
fbaB	946632	Fructose-bisphosphate aldolase class 1		Ambiguous/Unsorted
pfkB	946230	6-phosphofructokinase isozyme 2		Ambiguous/Unsorted
chbG	946231	UPF0249 protein chbG		Temporarly Up Regulated
tldD	947749	Protein tldD		Down Regulated
ydjN	946238	Uncharacterized symporter ydjN	[]	Down Regulated
yniA	946236	Uncharacterized protein yniA	[]	Up Regulated
katE	946234	Catalase HPII; Catalase		Ambiguous/Unsorted
cedA	946235	Cell division activator cedA		Down Regulated
yhcH	947750	Uncharacterized protein yhcH	['Carbohydrate transport and metabolism', 'carbohydrate metabolic process']	Up Regulated
tolA	946625	Protein tolA		Down Regulated
accB	947758	Biotin carboxyl carrier protein of acetyl-CoA carboxylase		Ambiguous/Unsorted
hpt	946624	Hypoxanthine phosphoribosyltransferase		Ambiguous/Unsorted
cyaY	947754	Protein cyaY		Up Regulated
cyaA	947755	Adenylate cyclase		Down Regulated
nanA	947742	N-acetylneuraminate lyase 1; N-acetylneuraminate lyase		Up Regulated
ccmE	946697	Cytochrome c-type biogenesis protein ccmE		Temporarly Up Regulated
aaeA	947748	p-hydroxybenzoic acid efflux pump subunit aaeA		Ambiguous/Unsorted
yejK	946690	Nucleoid-associated protein ndpA		Ambiguous/Unsorted
rlmI	946691	Ribosomal RNA large subunit methyltransferase I		Ambiguous/Unsorted
yejL	946694	UPF0352 protein yejL		Temporarly Up Regulated
rtn	946695	Protein rtn		Up Regulated
lpxT	946693	Inner membrane protein yeiU		Down Regulated
recQ	948318	ATP-dependent DNA helicase recQ		Down Regulated
dapE	948313	Succinyl-diaminopimelate desuccinylase		Ambiguous/Unsorted
pldB	948314	Lysophospholipase L2		Down Regulated
metR	948310	HTH-type transcriptional regulator metR		Down Regulated

hemY	948311	Protein hemY		Ambiguous/Unsorted
ushA	947331	Protein ushA		Ambiguous/Unsorted
yejM	946685	Inner membrane protein yejM		Down Regulated
mlaE	947732	UPF0393 inner membrane protein yrbE		Temporarly Down Regula
yrbE	947732	UPF0393 inner membrane protein yrbE		Temporarly Down Regula
flgC	946687	Flagellar basal-body rod protein flgC		Down Regulated
yejF	946689	Uncharacterized ABC transporter ATP-binding protein yejF		Ambiguous/Unsorted
cueO	947736	Blue copper oxidase cueO		Temporarly Up Regulated
kdsD	947734	Arabinose 5-phosphate isomerase		Ambiguous/Unsorted
osmF	946681	Putative osmoprotectant uptake system substrate-binding protein osmF		Up Regulated
flgM	946684	Negative regulator of flagellin synthesis		Ambiguous/Unsorted
pldA	948307	Phospholipase A1		Up Regulated
rffG	948300	dTDP-glucose 4,6-dehydratase		Down Regulated
ydhP	947340	Inner membrane transport protein ydhP		Temporarly Down Regula
rffM	948301	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase		Temporarly Up Regulated
gltB	947724	Glutamate synthase [NADPH] large chain		Ambiguous/Unsorted
gltD	947723	Glutamate synthase [NADPH] small chain		Down Regulated
ampE	946678	Protein ampE		Temporarly Up Regulated
speE	947726	Spermidine synthase		Ambiguous/Unsorted
secG	947720	Protein-export membrane protein secG		Up Regulated
fruK	946676	1-phosphofructokinase		Down Regulated
fruB	946677	Multiphosphoryl transfer protein		Ambiguous/Unsorted
yeiP	946674	Elongation factor P-like protein		Ambiguous/Unsorted
yejA	946675	Uncharacterized protein yejA		Down Regulated
fruA	946672	PTS system fructose-specific EIIBC component		Down Regulated
fixA	947316	Protein fixA		Ambiguous/Unsorted
pcnB	947318	Poly(A) polymerase		Down Regulated
lysA	947313	Diaminopimelate decarboxylase		Ambiguous/Unsorted
galR	947314	HTH-type transcriptional regulator galR		Temporarly Down Regula
aas	947315	Bifunctional protein aas		Temporarly Up Regulated
hpf	947718	Probable sigma(54) modulation protein		Down Regulated
pspB	945893	Phage shock protein B		Temporarly Up Regulated
speD	947719	S-adenosylmethionine decarboxylase proenzyme		Ambiguous/Unsorted
speB	947715	Agmatinase		Down Regulated
lysP	946667	Lysine-specific permease		Down Regulated
amiD	945494	N-acetylmuramoyl-L-alanine amidase amiD		Temporarly Up Regulated
rpoN	947714	RNA polymerase sigma-54 factor		Down Regulated
ybjQ	945493	UPF0145 protein ybjQ		Temporarly Down Regula
ybjT	945496	Uncharacterized protein ybjT	['Cell wall membrane envelope biogenesis']	Temporarly Down Regula
nfo	946669	Endonuclease 4; Probable endonuclease 4		Down Regulated
ybjS	945495	Uncharacterized protein ybjS	[]	Ambiguous/Unsorted
aat	945490	Leucyl/phenylalanyl-tRNA--protein transferase		Down Regulated
cdd	946663	Cytidine deaminase		Up Regulated
ybjP	945491	Uncharacterized lipoprotein ybjP	['Amino acid transport and metabolism', ' Building block biosynthesis']	Up Regulated
pbpG	946662	D-alanyl-D-alanine endopeptidase		Down Regulated
ybjD	945498	Uncharacterized protein ybjD	['SOS response']	Up Regulated
pspC	945499	Phage shock protein C		Up Regulated
kduD	947323	2-deoxy-D-gluconate 3-dehydrogenase		Down Regulated
yqeF	947324	Probable acetyl-CoA acetyltransferase		Temporarly Up Regulated
ymdC	947321	Uncharacterized protein ymdC	[]	Temporarly Up Regulated
macA	947322	Macrolide-specific efflux protein macA		Ambiguous/Unsorted
iraP	947709	Anti-adapter protein iraP		Temporarly Up Regulated
ygeV	947320	Uncharacterized sigma-54-dependent transcriptional regulator y	['Signal transduction mechanisms', ' Genetic unit regulated', 'two component signal transduction system phosphorelay ', 'regulation o	Up Regulated
dusB	947707	tRNA-dihydrouridine synthase B		Temporarly Up Regulated
prmA	947708	Ribosomal protein L11 methyltransferase		Ambiguous/Unsorted
artP	945489	Arginine transport ATP-binding protein artP		Temporarly Down Regula
potF	945480	Putrescine-binding periplasmic protein		Ambiguous/Unsorted
gmr	945868	Protein gmr		Temporarly Up Regulated
yciT	945869	Uncharacterized HTH-type transcriptional regulator yciT		Ambiguous/Unsorted
rimK	945484	Ribosomal protein S6 modification protein		Ambiguous/Unsorted
csrD	947702	Uncharacterized protein yhdA		Temporarly Up Regulated
ybjN	945482	Uncharacterized protein ybjN	[' Energy metabolism carbon ', 'electron transport', 'translation']	Down Regulated
murA	947703	UDP-N-acetylglucosamine 1-carboxyvinyltransferase		Ambiguous/Unsorted
nfsA	945483	Oxygen-insensitive NADPH nitroreductase		Ambiguous/Unsorted
sapA	945873	Peptide transport periplasmic protein sapA		Up Regulated

ycjF	945878	UPF0283 membrane protein ycjF		Temporarly Down Regula
prr	945876	Gamma-aminobutyraldehyde dehydrogenase		Up Regulated
ycjW	945875	Uncharacterized HTH-type transcriptional regulator ycjW	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depende	Ambiguous/Unsorted
potG	945476	Putrescine transport ATP-binding protein potG		Ambiguous/Unsorted
grxA	945479	Glutaredoxin-1		Ambiguous/Unsorted
tyrR	945879	Transcriptional regulatory protein tyrR		Ambiguous/Unsorted
ybjI	945470	Phosphatase ybjI		Down Regulated
ihfA	945472	Integration host factor subunit alpha		Ambiguous/Unsorted
ybjL	945474	Putative transport protein ybjL		Ambiguous/Unsorted
puuD	945882	Gamma-glutamyl-gamma-aminobutyrate hydrolase		Ambiguous/Unsorted
rppH	947300	RNA pyrophosphohydrolase		Temporarly Up Regulated
pspA	945887	Phage shock protein A		Down Regulated
puuR	945886	HTH-type transcriptional regulator puuR		Up Regulated
ompG	945889	Outer membrane protein G		Ambiguous/Unsorted
ygdR	947304	Uncharacterized lipoprotein ygdR	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid metabolic process']	Temporarly Up Regulated
lgt	947303	Prolipoprotein diacylglyceryl transferase		Ambiguous/Unsorted
yfhM	947302	Uncharacterized lipoprotein yfhM	[]	Up Regulated
rhmD	945881	L-rhamnonate dehydratase		Ambiguous/Unsorted
yfaW	945881	L-rhamnonate dehydratase		Ambiguous/Unsorted
tas	947306	Protein tas		Temporarly Up Regulated
ascG	947305	HTH-type transcriptional regulator ascG		Ambiguous/Unsorted
acrD	945464	Probable aminoglycoside efflux pump		Ambiguous/Unsorted
rimO	945465	Ribosomal protein S12 methylthiotransferase rimO		Down Regulated
yliE	945462	Uncharacterized protein yliE	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription', 'r	Up Regulated
rssB	945855	Protein hnr		Temporarly Down Regula
yciO	945854	Uncharacterized protein yciO	[]	Ambiguous/Unsorted
Ogt	945853	Methylated-DNA--protein-cysteine methyltransferase		Down Regulated
add	945851	Adenosine deaminase		Ambiguous/Unsorted
gsiA	945457	Glutathione import ATP-binding protein gsiA		Down Regulated
gsiB	945459	Glutathione-binding protein gsiB		Ambiguous/Unsorted
deoR	945453	Deoxyribose operon repressor		Down Regulated
moeA	945454	Molybdopterin biosynthesis protein moeA		Ambiguous/Unsorted
dacC	945455	D-alanyl-D-alanine carboxypeptidase dacC		Ambiguous/Unsorted
folC	945451	Bifunctional protein folC		Ambiguous/Unsorted
moeB	945452	Molybdopterin biosynthesis protein moeB		Temporarly Down Regula
yciV	945857	Protein trpH		Down Regulated
yciW	945859	Uncharacterized protein yciW	['Lipid transport and metabolism']	Down Regulated
tktB	945865	Transketolase 2		Up Regulated
rnb	945864	Exoribonuclease 2		Temporarly Down Regula
osmB	945866	Osmotically-inducible lipoprotein B		Up Regulated
ydfI	945861	Uncharacterized oxidoreductase ydfI	[' Carbon compound utilization']	Up Regulated
yciN	945860	Protein yciN		Up Regulated
dapF	948364	Diaminopimelate epimerase		Down Regulated
ybcJ	945158	Uncharacterized protein ybcJ	[]	Ambiguous/Unsorted
yihN	948365	Inner membrane protein yihN		Ambiguous/Unsorted
glnL	948360	Nitrogen regulation protein NR(II); Sensor protein		Down Regulated
proX	947165	Glycine betaine-binding periplasmic protein		Temporarly Up Regulated
glnG	948361	Nitrogen regulation protein NR(I)		Temporarly Up Regulated
emrA	947166	Multidrug resistance protein A		Down Regulated
hemN	948362	Oxygen-independent coproporphyrinogen-III oxidase		Down Regulated
yihI	948363	UPF0241 protein yihI		Ambiguous/Unsorted
luxS	947168	S-ribosylhomocysteine lyase		Ambiguous/Unsorted
allC	945150	Allantoate amidohydrolase		Down Regulated
rfbA	945154	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 1		Down Regulated
yihL	948368	Uncharacterized HTH-type transcriptional regulator yihL	['Amino acid transport and metabolism', ' Carbon compound utilization', ' Central intermediary metabolism', ' Primary Active Transpor	Down Regulated
typA	948369	GTP-binding protein typA/BipA; GTP-binding protein typA/bipA		Ambiguous/Unsorted
rplT	945152	50S ribosomal protein L20		Temporarly Up Regulated
ytfE	948724	Regulator of cell morphogenesis and NO signaling		Ambiguous/Unsorted
malY	945937	Protein malY		Up Regulated
Cyca	948725	D-serine/D-alanine/glycine transporter		Down Regulated
ytfB	948727	Uncharacterized protein ytfB	['Replication recombination and repair', 'DNA recombination', 'DNA integration']	Up Regulated
rplI	948720	50S ribosomal protein L9		Ambiguous/Unsorted
rpsR	948721	30S ribosomal protein S18		Down Regulated
mhpR	945938	Mhp operon transcriptional activator		Temporarly Up Regulated
pbpC	947152	Penicillin-binding protein 1C		Temporarly Down Regula

dtd	948378	D-tyrosyl-tRNA(Tyr) deacylase		Down Regulated
dbpA	947153	ATP-independent RNA helicase dbpA		Down Regulated
yqcA	947151	Uncharacterized protein yqcA	[]	Ambiguous/Unsorted
ygaM	947157	Uncharacterized protein ygaM	['Cell wall membrane envelope biogenesis']	Up Regulated
prpD	945931	2-methylcitrate dehydratase		Ambiguous/Unsorted
cpdB	948729	ECs5191; ECP_4467; ECSE_4519; EcSMS35_4692; ECUMN_4750; Z5824; EcolC_3793; ECS88_4807; E2348C_4544; EC55989_4773; ECDH10B_4408; ECED1_5072; ECH74115_5730; ECIAI		Up Regulated
yihP	948371	Inner membrane symporter yihP		Down Regulated
nrdE	947155	Ribonucleoside-diphosphate reductase; Ribonucleoside-diphosphate reductase 2 subunit alpha		Temporarly Up Regulate
cysQ	948728	3'(2'),5'-bisphosphate nucleotidase cysQ		Up Regulated
sfmD	945160	Outer membrane usher protein sfmD		Ambiguous/Unsorted
yegI	947159	Uncharacterized protein yegI	[]	Ambiguous/Unsorted
macB	945164	Macrolide export ATP-binding/permease protein macB		Up Regulated
glnA	948370	Glutamine synthetase		Temporarly Down Regula
ytfJ	948737	Uncharacterized protein ytfJ	['Energy production and conversion', 'Secondary metabolites biosynthesis transport and catabolism']	Temporarly Up Regulate
ytfL	948735	UPF0053 inner membrane protein ytfL		Temporarly Down Regula
ytfM	948733	Uncharacterized protein ytfM	[]	Up Regulated
msrA	948734	Peptide methionine sulfoxide reductase msrA		Ambiguous/Unsorted
qorB	948731	Uncharacterized oxidoreductase ytfG		Up Regulated
fdhE	948384	Protein fdhE		Down Regulated
ydjA	945964	Putative NAD(P)H nitroreductase ydjA		Ambiguous/Unsorted
yddB	945961	Uncharacterized protein yddB	['Cell wall membrane envelope biogenesis', 'translation', 'ion transport']	Up Regulated
MltB	947184	Membrane-bound lytic murein transglycosylase B		Down Regulated
allB	945134	Allantoinase		Down Regulated
tus	945135	DNA replication terminus site-binding protein		Down Regulated
norR	947186	Anaerobic nitric oxide reductase transcription regulator norR		Temporarly Down Regula
kefA	945132	Potassium efflux system kefA		Ambiguous/Unsorted
pmrD	945130	Signal transduction protein pmrD		Temporarly Up Regulate
ytfN	948742	Uncharacterized protein ytfN	[]	Down Regulated
fhlA	947181	Formate hydrogenlyase transcriptional activator		Ambiguous/Unsorted
ytfQ	948746	ABC transporter periplasmic-binding protein ytfQ		Up Regulated
ppa	948748	Inorganic pyrophosphatase		Ambiguous/Unsorted
ydeN	945957	Uncharacterized sulfatase ydeN	['Signal transduction mechanisms', ' Metabolism of other compounds']	Up Regulated
yihW	948381	Uncharacterized HTH-type transcriptional regulator yihW	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depende	Temporarly Down Regula
yihX	948380	Phosphatase yihX		Up Regulated
fdoH	948395	Formate dehydrogenase-O iron-sulfur subunit		Down Regulated
ylbA	945149	Uncharacterized protein ylbA	[' Carbon compound utilization', 'proteolysis']	Ambiguous/Unsorted
ydaL	945953	Uncharacterized protein ydaL	[]	Up Regulated
clcB	947179	Voltage-gated ClC-type chloride channel clcB		Temporarly Down Regula
csrA	947176	Carbon storage regulator		Temporarly Up Regulate
fdhD	948393	Protein fdhD		Ambiguous/Unsorted
fdoG	948394	Formate dehydrogenase-O major subunit		Down Regulated
dgt	947177	Deoxyguanosinetriphosphate triphosphohydrolase		Down Regulated
qseC	947174	Sensor protein qseC; Sensor protein		Down Regulated
xdhC	945148	Xanthine dehydrogenase iron-sulfur-binding subunit		Ambiguous/Unsorted
mppA	945951	Periplasmic murein peptide-binding protein		Up Regulated
ThiM	945142	Hydroxyethylthiazole kinase		Ambiguous/Unsorted
lpxM	945143	Lipid A biosynthesis (KDO)2-(lauroyl)-lipid IVA acyltransferase		Ambiguous/Unsorted
yniB	945140	Uncharacterized protein yniB	[]	Up Regulated
yjgA	948751	UPF0307 protein yjgA		Up Regulated
nrdD	948755	Anaerobic ribonucleoside-triphosphate reductase		Temporarly Up Regulate
ydbH	945949	Uncharacterized protein ydbH	[]	Down Regulated
ydhV	948756	Uncharacterized protein ydhV	[' Central intermediary metabolism']	Temporarly Up Regulate
fbp	948753	Fructose-1,6-bisphosphatase class 1		Ambiguous/Unsorted
yddA	945945	Inner membrane ABC transporter ATP-binding protein yddA		Ambiguous/Unsorted
uspF	945948	Universal stress protein F		Up Regulated
fre	948325	NAD(P)H-flavin reductase		Down Regulated
fadA	948324	3-ketoacyl-CoA thiolase		Up Regulated
raiA	947129	Ribosome-associated inhibitor A		Up Regulated
rfaH	948327	Transcriptional activator rfaH		Ambiguous/Unsorted
ubiD	948326	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Down Regulated
tatA	948321	Sec-independent protein translocase protein tatA		Down Regulated
ysgA	948320	Putative carboxymethylenebutenolidase		Up Regulated
patA	947120	Putrescine aminotransferase		Up Regulated
ubiB	948322	Probable ubiquinone biosynthesis protein ubiB		Down Regulated
nth	947122	Endonuclease III		Down Regulated

ybbP	945118	Uncharacterized ABC transporter permease ybbP		Up Regulated
ydgH	945117	Protein ydgH		Down Regulated
yjgI	948765	Uncharacterized oxidoreductase yjgI	[]	Down Regulated
pyrB	948767	Aspartate carbamoyltransferase catalytic chain; Aspartate carbamoyltransferase		Ambiguous/Unsorted
treR	948760	HTH-type transcriptional regulator treR		Down Regulated
pyrI	948763	Aspartate carbamoyltransferase regulatory chain		Down Regulated
treC	948762	Trehalose-6-phosphate hydrolase		Ambiguous/Unsorted
xdhA	947116	Xanthine dehydrogenase molybdenum-binding subunit		Ambiguous/Unsorted
yigI	948338	Uncharacterized protein yigI	[]	Down Regulated
ybbA	945122	Uncharacterized ABC transporter ATP-binding protein ybbA		Ambiguous/Unsorted
fadB	948336	Fatty acid oxidation complex subunit alpha		Up Regulated
pepQ	948335	Xaa-Pro dipeptidase		Ambiguous/Unsorted
queD	945123	Putative 6-pyruvoyl tetrahydrobiopterin synthase		Up Regulated
hemG	948331	Protoporphyrinogen oxidase		Ambiguous/Unsorted
ompW	945128	Outer membrane protein W		Up Regulated
tesA	945127	Acyl-CoA thioesterase I		Down Regulated
tabA	948777	Uncharacterized protein yjgK		Down Regulated
yjgL	948776	Uncharacterized protein yjgL	[' Type of regulation']	Up Regulated
yjgJ	948775	Uncharacterized HTH-type transcriptional regulator yjgJ	['Cell wall membrane envelope biogenesis', 'Intracellular trafficking secretion and vesicular transport', ' Cell division', 'protein transpo	Down Regulated
argI	948774	Ornithine carbamoyltransferase chain I; Ornithine carbamoyltransferase		Down Regulated
rraB	948773	Uncharacterized protein yjgD		Up Regulated
yjgM	948772	Uncharacterized N-acetyltransferase yjgM	[]	Temporarly Up Regulated
uvrD	948347	DNA helicase II		Temporarly Down Regula
rdoA	948346	Protein rdoA		Temporarly Down Regula
mobA	948349	Molybdopterin-guanine dinucleotide biosynthesis protein A		Down Regulated
proV	947148	Glycine betaine/L-proline transport ATP-binding protein proV		Temporarly Down Regula
nrdF	947149	Ribonucleoside-diphosphate reductase 2 subunit beta		Up Regulated
ygaU	947144	Uncharacterized protein ygaU	[]	Ambiguous/Unsorted
ygiS	947140	Putative binding protein ygiS		Up Regulated
allD	948342	Ureidoglycolate dehydrogenase		Temporarly Down Regula
holC	948787	DNA polymerase III subunit chi		Ambiguous/Unsorted
recE	945918	Exodeoxyribonuclease 8		Temporarly Down Regula
yccU	949008	Uncharacterized protein yccU	[]	Up Regulated
fadE	949007	Acyl-coenzyme A dehydrogenase		Up Regulated
btuE	945915	Vitamin B12 transport periplasmic protein btuE; Glutathione peroxidase		Ambiguous/Unsorted
abgT	945912	Aminobenzoyl-glutamate transport protein		Ambiguous/Unsorted
rpsI	949000	30S ribosomal protein S9		Down Regulated
yjgN	948784	Inner membrane protein yjgN		Ambiguous/Unsorted
prfA	949002	Peptide chain release factor 1		Ambiguous/Unsorted
YigA	948359	Uncharacterized protein yigA		Temporarly Up Regulated
recR	945100	Recombination protein recR		Down Regulated
degP	947139	Protease do		Ambiguous/Unsorted
yihF	948352	Uncharacterized protein yihF	['Replication recombination and repair', ' Adaptation to stress']	Down Regulated
corA	948351	Magnesium transport protein corA		Temporarly Down Regula
yahE	947134	Uncharacterized protein yahE	[]	Temporarly Up Regulated
dnaX	945105	DNA polymerase III subunit tau		Ambiguous/Unsorted
ydaN	945910	Zinc transport protein zntB		Ambiguous/Unsorted
ftsK	945102	DNA translocase ftsK		Down Regulated
polA	948356	DNA polymerase I		Ambiguous/Unsorted
dps	945101	DNA protection during starvation protein		Up Regulated
xerC	948355	Tyrosine recombinase xerC		Temporarly Up Regulated
stpA	947130	DNA-binding protein stpA		Ambiguous/Unsorted
ybaB	945104	UPF0133 protein ybaB		Ambiguous/Unsorted
dsbA	948353	Thiol:disulfide interchange protein dsbA		Up Regulated
ykgG	945906	UPF0707 protein ykgG		Up Regulated
fnr	945908	Fumarate and nitrate reduction regulatory protein		Down Regulated
uspE	945904	Universal stress protein E		Up Regulated
folK	948792	2-amino-4-hydroxy-6-hydroxymethyldihydropteridine pyrophosphokinase		Up Regulated
lptF	948795	Lipopolysaccharide export system permease protein lptF		Down Regulated
yehT	949024	Uncharacterized response regulatory protein yehT	['transcription', 'regulation of transcription DNA dependent']	Down Regulated
CARA	949025	Carbamoyl-phosphate synthase small chain		Ambiguous/Unsorted
yacL	944809	UPF0231 protein yacL		Up Regulated
yehS	949026	Uncharacterized protein yehS	['Replication recombination and repair']	Temporarly Up Regulated
idi	949020	Isopentenyl-diphosphate Delta-isomerase		Ambiguous/Unsorted
ftsL	944803	Cell division protein ftsL		Down Regulated

fruR	944804	Fructose repressor		Temporarly Down Regula
mlrA	949029	HTH-type transcriptional regulator mlrA		Ambiguous/Unsorted
acpP	944805	Acyl carrier protein		Down Regulated
maeA	946031	NAD-dependent malic enzyme		Ambiguous/Unsorted
cfa	944811	Cyclopropane-fatty-acyl-phospholipid synthase		Temporarly Up Regulated
mraZ	944810	Protein mraZ		Up Regulated
fdnG	946035	Formate dehydrogenase, nitrate-inducible, major subunit		Down Regulated
hyfB	946961	Hydrogenase-4 component B		Temporarly Up Regulated
ydhF	946960	Oxidoreductase ydhF		Up Regulated
adhP	946036	Alcohol dehydrogenase, propanol-preferring		Up Regulated
ycgK	946963	Uncharacterized protein ycgK	[]	Up Regulated
frsA	946039	Esterase frsA		Ambiguous/Unsorted
sufA	949014	Protein sufA		Up Regulated
ygfT	949018	Uncharacterized protein ygfT	['electron transport']	Ambiguous/Unsorted
yncH	946024	Uncharacterized protein yncH	[]	Ambiguous/Unsorted
ppx	946970	Exopolyphosphatase		Down Regulated
fucK	946022	L-fuculokinase		Ambiguous/Unsorted
yfgD	946974	Uncharacterized protein yfgD	[]	Ambiguous/Unsorted
yqcC	946027	Uncharacterized protein yqcC	[]	Ambiguous/Unsorted
rhsE	946026	ECDH10B_1586; EC55989_0238; b1456		Down Regulated
ybjX	946025	Uncharacterized protein ybjX	[]	Down Regulated
hda	946977	DnaA-homolog protein hda		Down Regulated
cirA	949042	Colicin I receptor		Ambiguous/Unsorted
galS	949043	HTH-type transcriptional regulator galS		Up Regulated
yeiG	949045	S-formylglutathione hydrolase yeiG		Down Regulated
artQ	949046	Arginine transport system permease protein artQ		Ambiguous/Unsorted
waaA	949048	3-deoxy-D-manno-octulosonic-acid transferase		Down Regulated
gltI	946938	Glutamate/aspartate periplasmic-binding protein		Ambiguous/Unsorted
yeiT	949049	Uncharacterized oxidoreductase yeiT	[' Primary Active Transporters']	Temporarly Up Regulated
pdhR	944827	Pyruvate dehydrogenase complex repressor		Ambiguous/Unsorted
ftsQ	944823	Cell division protein ftsQ		Down Regulated
mutT	944824	Mutator mutT protein		Down Regulated
ydeP	946055	Protein ydeP		Down Regulated
yadG	944833	Uncharacterized ABC transporter ATP-binding protein yadG		Ambiguous/Unsorted
gnsb	946054	Protein gnsB		Temporarly Up Regulated
gadC	946057	Probable glutamate/gamma-aminobutyrate antiporter		Ambiguous/Unsorted
gcd	944830	Quinoprotein glucose dehydrogenase		Ambiguous/Unsorted
ygiW	946051	Protein ygiW		Temporarly Up Regulated
ydeQ	946050	Uncharacterized fimbrial-like protein ydeQ	[]	Temporarly Up Regulated
tmcA	946053	Uncharacterized protein ypfI		Down Regulated
ddpA	946052	Probable D,D-dipeptide-binding periplasmic protein ddpA		Up Regulated
PqqL	946059	Probable zinc protease pqqL		Up Regulated
mglB	949041	D-galactose-binding periplasmic protein		Up Regulated
rpmB	946941	50S ribosomal protein L28		Down Regulated
eutD	946940	Ethanolamine utilization protein eutD		Down Regulated
ubiX	949033	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Ambiguous/Unsorted
leuO	949034	Probable HTH-type transcriptional regulator leuO		Up Regulated
narQ	946948	Nitrate/nitrite sensor protein narQ		Up Regulated
bcp	946949	Putative peroxiredoxin bcp		Temporarly Down Regula
ppiB	949038	Peptidyl-prolyl cis-trans isomerase B; Peptidyl-prolyl cis-trans isomerase		Up Regulated
thyA	949035	Thymidylate synthase		Down Regulated
mglA	949036	Galactose/methyl galactoside import ATP-binding protein mglA		Up Regulated
maeB	946947	NADP-dependent malic enzyme		Ambiguous/Unsorted
lpxC	944816	UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase		Ambiguous/Unsorted
Gpt	944817	Xanthine phosphoribosyltransferase		Ambiguous/Unsorted
murD	944818	UDP-N-acetylmuramoylalanine--D-glutamate ligase		Ambiguous/Unsorted
mglC	949039	Galactoside transport system permease protein mglC		Up Regulated
murF	944813	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine ligase		Ambiguous/Unsorted
wzzE	944815	Lipopolysaccharide biosynthesis protein wzzE		Ambiguous/Unsorted
nhaB	944822	Na(+)/H(+) antiporter nhaB		Down Regulated
osmC	946043	Peroxiredoxin osmC		Up Regulated
ypfJ	946956	Uncharacterized protein ypfJ	[]	Up Regulated
rnhA	946955	Ribonuclease HI; Ribonuclease H		Down Regulated
yffB	946953	Protein yffB		Ambiguous/Unsorted
argT	949030	Lysine-arginine-ornithine-binding periplasmic protein		Up Regulated

gcvR	946950	Glycine cleavage system transcriptional repressor		Ambiguous/Unsorted
ligT	944848	2'-5'-RNA ligase		Down Regulated
yadB	944846	Glutamyl-Q tRNA(Asp) synthetase; Insertion element IS150 uncharacterized 14 kDa protein		Temporarly Up Regulated
uxaC	947599	Uronate isomerase		Up Regulated
hrpB	944845	ATP-dependent RNA helicase hrpB		Ambiguous/Unsorted
ycgF	947592	Uncharacterized protein ycgF	['Signal transduction mechanisms', 'two component signal transduction system phosphorelay ', 'regulation of transcription DNA depe	Temporarly Up Regulated
ygfK	949068	Uncharacterized protein ygfK		Temporarly Down Regula
rna	949065	Ribonuclease I		Temporarly Down Regula
fadH	947594	2,4-dienoyl-CoA reductase [NADPH]		Up Regulated
coaE	949060	Dephospho-CoA kinase		Ambiguous/Unsorted
dksA	944850	DnaK suppressor protein		Up Regulated
ydhQ	944851	Uncharacterized protein ydhQ	['Translation ribosomal structure and biogenesis', ' Adaptation to stress', 'translation']	Temporarly Down Regula
tam	946074	Trans-aconitate 2-methyltransferase		Up Regulated
HtpX	946076	Probable protease htpX		Down Regulated
sfsA	944855	Sugar fermentation stimulation protein A		Up Regulated
rnhB	944852	Ribonuclease HII		Down Regulated
yneJ	946079	Uncharacterized HTH-type transcriptional regulator yneJ	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depende	Temporarly Down Regula
panB	944839	3-methyl-2-oxobutanoate hydroxymethyltransferase		Down Regulated
lpxB	944838	Lipid-A-disaccharide synthase		Temporarly Down Regula
rplU	949057	50S ribosomal protein L21		Temporarly Up Regulated
lrp	949051	Leucine-responsive regulatory protein		Ambiguous/Unsorted
cydD	949052	ATP-binding/permease protein cydD		Ambiguous/Unsorted
HypB	947194	Hydrogenase isoenzymes nickel incorporation protein hypB		Down Regulated
hipA	946064	Protein hipA		Temporarly Up Regulated
ygbK	947199	Uncharacterized protein ygbK	['Carbohydrate transport and metabolism']	Down Regulated
yadN	944841	Uncharacterized fimbrial-like protein yadN	[' Building block biosynthesis']	Ambiguous/Unsorted
ydeI	946068	Uncharacterized protein ydeI	['Signal transduction mechanisms', 'response to stress']	Up Regulated
hipB	946065	HTH-type transcriptional regulator hipB		Temporarly Up Regulated
ykgC	946092	Probable pyridine nucleotide-disulfide oxidoreductase ykgC		Ambiguous/Unsorted
ulaG	948705	Probable L-ascorbate-6-phosphate lactonase ulaG		Temporarly Up Regulated
argP	944867	Chromosome initiation inhibitor		Down Regulated
mak	949086	Fructokinase		Up Regulated
symE	949088	Endoribonuclease symE		Ambiguous/Unsorted
ymdB	946987	UPF0189 protein ymdB		Up Regulated
xseA	946988	Exodeoxyribonuclease 7 large subunit		Ambiguous/Unsorted
narP	949081	Nitrate/nitrite response regulator protein narP		Temporarly Down Regula
der	946983	GTP-binding protein engA		Down Regulated
yfgJ	946984	Uncharacterized protein yfgJ	[' Type of regulation']	Down Regulated
yciI	949085	Protein yciI		Up Regulated
dnaE	944877	DNA polymerase III subunit alpha		Down Regulated
ispU	944874	Undecaprenyl pyrophosphate synthetase		Up Regulated
yfgM	946981	UPF0070 protein yfgM		Ambiguous/Unsorted
yaeR	944875	Uncharacterized protein yaeR	[]	Ambiguous/Unsorted
flhE	946094	Flagellar protein flhE		Down Regulated
glnH	944872	Glutamine-binding periplasmic protein		Ambiguous/Unsorted
yacF	944873	UPF0289 protein yacF		Temporarly Down Regula
prc	946096	Tail-specific protease		Down Regulated
rseP	944871	Regulator of sigma E protease		Down Regulated
yneK	946080	Uncharacterized protein yneK	[]	Ambiguous/Unsorted
ulaF	948711	L-ribulose-5-phosphate 4-epimerase ulaF		Temporarly Down Regula
erpA	944857	Iron-sulfur cluster insertion protein erpA		Ambiguous/Unsorted
ulaD	948714	3-keto-L-gulonate-6-phosphate decarboxylase ulaD		Temporarly Down Regula
fhuA	944856	Ferrichrome-iron receptor		Up Regulated
yciM	944858	Uncharacterized protein yciM	[]	Temporarly Up Regulated
sbcC	949076	Nuclease sbcCD subunit C		Temporarly Down Regula
xdhD	949079	Probable hypoxanthine oxidase xdhD		Ambiguous/Unsorted
iscA	946999	Iron-binding protein iscA		Ambiguous/Unsorted
hscB	946995	Co-chaperone protein hscB		Down Regulated
ccmG	949073	Thiol:disulfide interchange protein dsbE		Temporarly Up Regulated
flgH	946996	Flagellar L-ring protein		Down Regulated
sseA	946993	3-mercaptopyruvate sulfurtransferase		Up Regulated
ygfM	949071	Uncharacterized protein ygfM		Ambiguous/Unsorted
sseB	946994	Protein sseB		Temporarly Down Regula
ytjB	946089	Protein smp		Down Regulated
ulaR	948706	HTH-type transcriptional regulator ulaR		Up Regulated

ispG	946991	4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase		Down Regulated
glnD	944863	[Protein-PII] uridylyltransferase		Down Regulated
yjfP	948707	Esterase yjfP		Up Regulated
ydfH	946087	Uncharacterized HTH-type transcriptional regulator ydfH	[]	Temporarly Up Regulated
ybbL	946990	Uncharacterized ABC transporter ATP-binding protein ybbL	[' Macromolecules cellular constituent biosynthesis', ' Primary Active Transporters', 'DNA repair', 'response to DNA damage stimulu	Temporarly Up Regulated
tsf	944866	Elongation factor Ts		Down Regulated
ydfG	946085	NADP-dependent L-serine/L-allo-threonine dehydrogenase ydfG		Ambiguous/Unsorted
yebR	946086	UPF0067 protein yebR		Down Regulated
skp	944861	Chaperone protein skp		Up Regulated
dapD	944862	2,3,4,5-tetrahydropyridine-2,6-dicarboxylate N-succinyltransferase		Down Regulated
caiC	944886	Probable crotonobetaine/carnitine-CoA ligase		Temporarly Up Regulated
hscA	944885	Chaperone protein hscA		Temporarly Down Regula
lpxD	944882	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase		Ambiguous/Unsorted
kdsB	945539	3-deoxy-manno-octulosonate cytidylyltransferase		Down Regulated
folM	949096	Dihydrofolate reductase folM		Temporarly Down Regula
hupB	949095	DNA-binding protein HU-beta		Ambiguous/Unsorted
fadJ	949097	Fatty acid oxidation complex subunit alpha		Up Regulated
ycbC	945546	Uncharacterized protein ycbC	['regulation of cell shape', 'peptidoglycan biosynthetic process']	Temporarly Up Regulated
mukF	945548	Chromosome partition protein mukF		Down Regulated
smtA	945547	Protein smtA		Up Regulated
ycbB	945541	Uncharacterized protein ycbB	['DNA replication']	Temporarly Up Regulated
rimP	947680	b3170		Temporarly Down Regula
rlmE	947689	b3179		Ambiguous/Unsorted
yhbY	947688	RNA-binding protein yhbY		Ambiguous/Unsorted
sufD	944878	Protein sufD		Up Regulated
truB	947687	tRNA pseudouridine synthase B		Down Regulated
gmhB	944879	D,D-heptose 1,7-bisphosphate phosphatase		Down Regulated
rpsO	947686	30S ribosomal protein S15		Ambiguous/Unsorted
yafL	944899	Uncharacterized lipoprotein yafL	['Cell wall membrane envelope biogenesis', 'lipid biosynthetic process', 'response to antibiotic']	Down Regulated
metI	944894	D-methionine transport system permease protein metI		Up Regulated
rof	944891	Protein rof		Ambiguous/Unsorted
yejH	945529	Uncharacterized protein yejH	[' Building block biosynthesis', 'amino acid biosynthetic process']	Temporarly Up Regulated
aroA	945528	3-phosphoshikimate 1-carboxyvinyltransferase		Ambiguous/Unsorted
ycaR	945537	UPF0434 protein ycaR		Ambiguous/Unsorted
rpsA	945536	30S ribosomal protein S1		Ambiguous/Unsorted
deaD	947674	Cold-shock DEAD box protein A		Down Regulated
cmk	945535	Cytidylate kinase		Ambiguous/Unsorted
ycaL	945534	Uncharacterized metalloprotease ycaL	[]	Up Regulated
nlpI	947673	Lipoprotein nlpI		Temporarly Up Regulated
ihfB	945533	Integration host factor subunit beta		Ambiguous/Unsorted
yhbS	947670	Uncharacterized N-acetyltransferase yhbS	[' Building block biosynthesis']	Up Regulated
msbA	945530	Lipid A export ATP-binding/permease protein msbA		Down Regulated
tilS	944889	tRNA(Ile)-lysidine synthase		Ambiguous/Unsorted
yhbW	947677	Uncharacterized protein yhbW	[]	Ambiguous/Unsorted
rlmL	945564	Ribosomal RNA large subunit methyltransferase L		Ambiguous/Unsorted
uup	945566	ABC transporter ATP-binding protein uup		Down Regulated
fabA	945568	3-hydroxydecanoyl-[acyl-carrier-protein] dehydratase		Ambiguous/Unsorted
ycbZ	945569	Putative protease La homolog		Ambiguous/Unsorted
mukB	945549	Chromosome partition protein mukB		Down Regulated
ftsH	947690	Cell division protease ftsH		Ambiguous/Unsorted
ompF	945554	Outer membrane protein F		Down Regulated
obgE	947694	ECIAI1_3331; ECP_3270; ECS88_3565; ECIAI39_3678; Z4545; ECH74115_4505; ECUMN_3663; EcolC_0517; c3940; EcHS_A3376; EC55989_3601; ECSE_3467; ECED1_3841; ECDH10B_339		Down Regulated
dacB	947693	D-alanyl-D-alanine carboxypeptidase dacB		Ambiguous/Unsorted
greA	947696	Transcription elongation factor; Transcription elongation factor greA		Ambiguous/Unsorted
pyrD	945556	Dihydroorotate dehydrogenase		Ambiguous/Unsorted
fis	947697	DNA-binding protein fis		Ambiguous/Unsorted
yhbE	947699	Uncharacterized inner membrane transporter yhbE	[' Type of regulation']	Temporarly Up Regulated
mukE	945550	Chromosome partition protein mukE		Ambiguous/Unsorted
copA	946106	Copper-exporting P-type ATPase A		Ambiguous/Unsorted
ycbS	946934	Uncharacterized outer membrane usher protein ycbS	['Cell motility', 'Intracellular trafficking secretion and vesicular transport', ' Macromolecules cellular constituent biosynthesis']	Ambiguous/Unsorted
yeeO	946506	Uncharacterized transporter yeeO	[]	Up Regulated
agaD	947649	N-acetylgalactosamine permease IID component		Ambiguous/Unsorted
hisF	946516	Imidazole glycerol phosphate synthase subunit hisF		Ambiguous/Unsorted
hisI	946515	Histidine biosynthesis bifunctional protein hisIE		Down Regulated
yeeU	946510	Uncharacterized protein yeeU		Up Regulated

yeeR	946512	Inner membrane protein yeeR		Up Regulated
garD	947641	D-galactarate dehydratase		Temporarly Up Regulated
rihA	945503	Pyrimidine-specific ribonucleoside hydrolase rihA		Up Regulated
cydC	945504	ATP-binding/permease protein cydC		Down Regulated
infA	945500	Translation initiation factor IF-1		Up Regulated
grxB	946926	Glutaredoxin-2		Ambiguous/Unsorted
ynfB	946119	UPF0482 protein ynfB		Ambiguous/Unsorted
speG	946117	Spermidine N(1)-acetyltransferase		Down Regulated
ycgM	946115	Uncharacterized protein ycgM	[]	Up Regulated
pyrG	946116	CTP synthase		Temporarly Down Regula
ydfE	946113	b1577; ECDH10B_1709		Temporarly Down Regula
ynjE	946505	Putative thiosulfate sulfurtransferase ynjE		Temporarly Up Regulated
sxy	946504	Protein sxy		Down Regulated
agaR	947636	Putative aga operon transcriptional repressor		Temporarly Down Regula
cbl	946502	HTH-type transcriptional regulator cbl		Down Regulated
garR	947631	2-hydroxy-3-oxopropionate reductase		Up Regulated
efeB	946500	Peroxidase ycdB		Down Regulated
garK	947632	Glycerate kinase 2		Up Regulated
yfeY	946919	Uncharacterized protein yfeY	[]	Ambiguous/Unsorted
ypeA	946917	Acetyltransferase ypeA		Down Regulated
amiA	946916	Probable N-acetylmuramoyl-L-alanine amidase amiA		Down Regulated
bisC	946915	Biotin sulfoxide reductase		Down Regulated
eutL	946914	Ethanolamine utilization protein eutL		Down Regulated
yfeX	946913	Uncharacterized protein yfeX	[' Building block biosynthesis']	Ambiguous/Unsorted
pflA	945517	Pyruvate formate-lyase 1-activating enzyme		Ambiguous/Unsorted
acrR	945516	HTH-type transcriptional regulator acrR		Up Regulated
trpC	945519	Tryptophan biosynthesis protein trpCF		Down Regulated
sufC	946128	Probable ATP-dependent transporter sufC		Ambiguous/Unsorted
kdgR	946129	Transcriptional regulator kdgR		Ambiguous/Unsorted
rimJ	946910	Ribosomal-protein-alanine acetyltransferase		Ambiguous/Unsorted
sbcB	946529	Exodeoxyribonuclease I		Down Regulated
yeeY	946532	Uncharacterized HTH-type transcriptional regulator yeeY	[' RNA related']	Down Regulated
yraR	947667	Uncharacterized protein yraR	[]	Up Regulated
yraL	947664	UPF0011 protein yraL		Ambiguous/Unsorted
rsmI	947664	UPF0011 protein yraL		Ambiguous/Unsorted
yeeF	946533	Inner membrane transport protein yeeF		Temporarly Up Regulated
yhbP	947665	UPF0306 protein yhbP		Ambiguous/Unsorted
yeeZ	946538	Protein yeeZ		Ambiguous/Unsorted
yhbT	947669	Uncharacterized protein yhbT	['Coenzyme transport and metabolism', ' Energy metabolism carbon ', ' Building block biosynthesis']	Down Regulated
yajO	946903	Uncharacterized oxidoreductase yajO	[]	Up Regulated
ycaK	945520	Uncharacterized NAD(P)H oxidoreductase ycaK	['amino acid transport']	Temporarly Up Regulated
ampH	946904	Penicillin-binding protein ampH		Down Regulated
ycaN	945523	Uncharacterized HTH-type transcriptional regulator ycaN	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
ycaQ	945524	Uncharacterized protein ycaQ	['two component signal transduction system phosphorelay ']	Ambiguous/Unsorted
ivy	946530	Inhibitor of vertebrate lysozyme		Up Regulated
diaA	947661	DnaA initiator-associating protein diaA		Up Regulated
hemF	946908	Coproporphyrinogen-III oxidase, aerobic		Down Regulated
lpxK	945526	Tetraacyldisaccharide 4'-kinase		Down Regulated
gloB	944902	Hydroxyacylglutathione hydrolase		Down Regulated
rsxC	946137	Electron transport complex protein rnfC		Down Regulated
dmsB	945507	Anaerobic dimethyl sulfoxide reductase chain B		Down Regulated
ynfE	946135	Putative dimethyl sulfoxide reductase chain ynfE		Up Regulated
dkgB	944901	2,5-diketo-D-gluconic acid reductase B		Ambiguous/Unsorted
rarA	945505	Replication-associated recombination protein A		Ambiguous/Unsorted
yafJ	944906	Putative glutamine amidotransferase yafJ		Ambiguous/Unsorted
queA	944905	S-adenosylmethionine:tRNA ribosyltransferase-isomerase		Ambiguous/Unsorted
ycaO	945509	UPF0142 protein ycaO		Down Regulated
cobT	946517	Nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase		Ambiguous/Unsorted
dacD	946518	D-alanyl-D-alanine carboxypeptidase dacD		Temporarly Down Regula
ynfD	946133	Uncharacterized protein ynfD	['Energy production and conversion', ' Electrochemical potential driven transporters', 'response to stress']	Up Regulated
ynfC	946131	UPF0257 lipoprotein ynfC		Down Regulated
poxB	946132	Pyruvate dehydrogenase [cytochrome]		Up Regulated
mreC	947655	Rod shape-determining protein mreC		Down Regulated
yraI	947657	Uncharacterized fimbrial chaperone yraI	['Amino acid transport and metabolism', 'Coenzyme transport and metabolism', ' Central intermediary metabolism']	Up Regulated
hslJ	946525	Heat shock protein hslJ		Up Regulated

yraP	947659	Uncharacterized protein yraP	['DNA replication']	Up Regulated
dgsA	945510	Protein mlc		Temporarly Down Regula
entC	945511	Isochorismate synthase entC		Up Regulated
yafK	944910	Uncharacterized protein yafK	[]	Down Regulated
ycaC	945512	Uncharacterized protein ycaC		Up Regulated
miaA	948690	tRNA Delta(2)-isopentenylpyrophosphate transferase		Down Regulated
yafN	944920	Uncharacterized protein yafN	['Replication recombination and repair', ' RNA related', ' Type of regulation', ' Protection', 'transcription', 'regulation of transcription D	Temporarly Down Regula
tpiA	948409	Triosephosphate isomerase		Temporarly Up Regulated
mutL	948691	DNA mismatch repair protein mutL		Temporarly Down Regula
rnr	948692	Ribonuclease R		Ambiguous/Unsorted
nsrR	948693	HTH-type transcriptional repressor nsrR		Down Regulated
rlmB	948694	23S rRNA (guanosine-2'-O-)-methyltransferase rlmB		Ambiguous/Unsorted
uxaA	947603	Altronate hydrolase		Up Regulated
exuR	947602	Exu regulon transcriptional regulator		Ambiguous/Unsorted
yjfC	948699	Uncharacterized protein yjfC	['electron transport', 'metabolic process']	Temporarly Up Regulated
sstT	947605	Serine/threonine transporter sstT		Down Regulated
wza	946558	Putative polysaccharide export protein wza		Ambiguous/Unsorted
ygjR	947600	Uncharacterized oxidoreductase ygjR	['Carbohydrate transport and metabolism']	Up Regulated
cdh	948410	CDP-diacylglycerol pyrophosphatase		Up Regulated
sbp	948411	Sulfate-binding protein		Temporarly Down Regula
fieF	948413	Ferrous-iron efflux pump fieF		Down Regulated
fpr	948414	Ferredoxin--NADP reductase		Up Regulated
uspD	948415	Universal stress protein D		Up Regulated
dinJ	944914	DNA-damage-inducible protein J		Temporarly Up Regulated
yiiS	948416	UPF0381 protein yiiS		Up Regulated
rraA	948419	Regulator of ribonuclease activity A		Down Regulated
flu	946540	Antigen 43		Up Regulated
yjeF	948685	Uncharacterized protein yjeF	[]	Up Regulated
amiB	948683	N-acetylmuramoyl-L-alanine amidase amiB		Down Regulated
yjeE	948684	UPF0079 ATP-binding protein yjeE		Ambiguous/Unsorted
sbmC	946546	DNA gyrase inhibitory protein		Up Regulated
hflX	948688	GTP-binding protein hflX		Ambiguous/Unsorted
yeeD	946539	UPF0033 protein yeeD		Down Regulated
sodA	948403	Superoxide dismutase [Mn]; Superoxide dismutase		Up Regulated
phoE	944926	Outer membrane pore protein E		Temporarly Down Regula
cpxR	948404	Transcriptional regulatory protein cpxR		Temporarly Down Regula
rhaD	948401	Rhamnulose-1-phosphate aldolase		Down Regulated
mutS	947206	DNA mismatch repair protein mutS		Ambiguous/Unsorted
pcm	944923	Protein-L-isoaspartate O-methyltransferase		Ambiguous/Unsorted
yiiQ	948408	Uncharacterized protein yiiQ	[]	Down Regulated
cpxA	948405	Sensor protein; Sensor protein cpxA		Down Regulated
yiiM	948406	Protein yiiM		Up Regulated
uvrC	947203	UvrABC system protein C		Temporarly Up Regulated
wcaA	946570	Putative colanic acid biosynthesis glycosyl transferase wcaA		Temporarly Down Regula
cpsG	946574	Phosphomannomutase		Temporarly Down Regula
yhaJ	947621	Uncharacterized HTH-type transcriptional regulator yhaJ	['Posttranslational modification protein turnover chaperones']	Down Regulated
yhaK	947620	Pirin-like protein yhaK		Temporarly Down Regula
tdcE	947623	Keto-acid formate acetyltransferase		Temporarly Down Regula
ybaL	946576	Inner membrane protein ybaL		Ambiguous/Unsorted
tdcF	947624	Protein tdcF		Up Regulated
metL	948433	Bifunctional aspartokinase/homoserine dehydrogenase 2		Down Regulated
rpoS	947210	RNA polymerase sigma factor rpoS; RNA polymerase sigma factor		Up Regulated
surE	947211	Multifunctional protein surE		Ambiguous/Unsorted
yciS	944936	Inner membrane protein yciS		Temporarly Down Regula
fsaB	948439	Fructose-6-phosphate aldolase 2		Ambiguous/Unsorted
truD	947214	tRNA pseudouridine synthase D		Ambiguous/Unsorted
cysD	947217	Sulfate adenylyltransferase subunit 2		Down Regulated
metB	948434	Cystathionine gamma-synthase		Ambiguous/Unsorted
metJ	948435	Met repressor		Up Regulated
rsmA	944939	b0051		Ambiguous/Unsorted
cysN	947219	Sulfate adenylyltransferase subunit 1		Down Regulated
rlmF	944938	Ribosomal RNA large subunit methyltransferase F		Down Regulated
ptsA	948437	Multiphosphoryl transfer protein 2		Ambiguous/Unsorted
galF	946560	UTP--glucose-1-phosphate uridylyltransferase		Up Regulated
mdlA	945092	Multidrug resistance-like ATP-binding protein mdlA		Down Regulated

wcaL	946565	Putative colanic acid biosynthesis glycosyltransferase wcaL		Down Regulated
yegH	946566	UPF0053 protein yegH		Temporarly Up Regulated
yqjG	947615	Uncharacterized protein yqjG	['electron transport']	Up Regulated
yqjD	947614	Uncharacterized protein yqjD	['Cell wall membrane envelope biogenesis', ' Macromolecules cellular constituent biosynthesis']	Ambiguous/Unsorted
ycgR	947609	Uncharacterized protein ycgR		Ambiguous/Unsorted
glpF	948422	Glycerol uptake facilitator protein		Up Regulated
yagX	947606	Uncharacterized protein yagX	['Carbohydrate transport and metabolism', 'Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcriptio	Ambiguous/Unsorted
zapB	948420	Cell division protein zapB		Up Regulated
cysC	947221	Adenylyl-sulfate kinase		Down Regulated
hslV	948429	ATP-dependent protease hslV		Ambiguous/Unsorted
ybgF	947227	Uncharacterized protein ybgF		Ambiguous/Unsorted
cytR	948427	HTH-type transcriptional repressor cytR		Temporarly Down Regula
ftsN	948428	Cell division protein ftsN		Down Regulated
maa	945096	Maltose O-acetyltransferase		Down Regulated
rpmE	948425	50S ribosomal protein L31		Down Regulated
hha	945098	Hemolysin expression-modulating protein		Down Regulated
priA	948426	Primosomal protein N'		Temporarly Up Regulated
glpK	948423	Glycerol kinase		Up Regulated
glpX	948424	Fructose-1,6-bisphosphatase class 2		Down Regulated
smpA	945583	Small protein A		Ambiguous/Unsorted
bamE	945583	Small protein A		Ambiguous/Unsorted
vacJ	945582	Lipoprotein vacJ		Ambiguous/Unsorted
mlaA	945582	Lipoprotein vacJ		Ambiguous/Unsorted
mpaA	945969	Protein mpaA		Ambiguous/Unsorted
hyaB	945580	Hydrogenase-1 large chain		Down Regulated
udk	946597	Uridine kinase		Down Regulated
cyoA	945080	Ubiquinol oxidase subunit 2		Temporarly Down Regula
yfaL	946595	Uncharacterized protein yfaL		Ambiguous/Unsorted
mltA	944964	Membrane-bound lytic murein transglycosylase A		Down Regulated
hypF	944963	Carbamoyltransferase hypF		Up Regulated
dcd	946593	Deoxycytidine triphosphate deaminase		Up Regulated
rutE	946591	Putative NADH dehydrogenase/NAD(P)H nitroreductase rutE		Temporarly Up Regulated
gfcD	945588	Uncharacterized lipoprotein gfcD		Temporarly Down Regula
ykgM	944960	50S ribosomal protein L31 type B		Up Regulated
cof	945089	HMP-PP phosphatase		Temporarly Down Regula
mdlB	945088	Multidrug resistance-like ATP-binding protein mdlB		Temporarly Up Regulated
ygiB	945086	UPF0441 protein ygiB		Down Regulated
lon	945085	ATP-dependent protease La		Up Regulated
clpX	945083	ATP-dependent Clp protease ATP-binding subunit clpX		Down Regulated
ltaE	944955	Low specificity L-threonine aldolase		Ambiguous/Unsorted
clpP	945082	ATP-dependent Clp protease proteolytic subunit		Ambiguous/Unsorted
ydcU	945976	Inner membrane ABC transporter permease protein ydcU		Ambiguous/Unsorted
yddW	945975	Uncharacterized lipoprotein yddW	[]	Up Regulated
ycbG	945570	UPF0268 protein ycbG		Temporarly Up Regulated
ompA	945571	Outer membrane protein A		Up Regulated
cusS	945978	Sensor kinase cusS; Sensor protein		Temporarly Up Regulated
ydbK	946587	Probable pyruvate-flavodoxin oxidoreductase		Temporarly Down Regula
tehB	945979	Tellurite resistance protein tehB		Up Regulated
hspQ	945578	Heat shock protein hspQ		Ambiguous/Unsorted
yneH	944973	Glutaminase 2		Down Regulated
yafV	946585	UPF0012 hydrolase yafV		Up Regulated
yahJ	944976	Uncharacterized protein yahJ	['Amino acid transport and metabolism', 'Inorganic ion transport and metabolism', ' Carbon compound utilization', ' Primary Active Tra	Down Regulated
yahK	944975	Uncharacterized zinc-type alcohol dehydrogenase-like protein y	['Amino acid transport and metabolism', ' Carbon compound utilization', 'metabolic process']	Up Regulated
ybaY	945070	Uncharacterized lipoprotein ybaY	[]	Up Regulated
gsk	946584	Inosine-guanosine kinase		Down Regulated
yahL	944970	Uncharacterized protein yahL	[]	Up Regulated
mgsA	945574	Methylglyoxal synthase		Ambiguous/Unsorted
scpA	945576	Protein sbm		Temporarly Down Regula
cpsB	946580	Mannose-1-phosphate guanylyltransferase 1; Mannose-1-phosphate guanylyltransferase		Ambiguous/Unsorted
dedD	944971	Protein dedD		Down Regulated
LeuC	945076	3-isopropylmalate dehydratase large subunit		Ambiguous/Unsorted
rutR	945075	HTH-type transcriptional regulator rutR		Down Regulated
yfjF	945078	UPF0125 protein yfjF; Protein rnfH		Ambiguous/Unsorted
crl	945077	Sigma factor-binding protein crl		Down Regulated
puuB	945072	Gamma-glutamylputrescine oxidoreductase		Down Regulated

ompX	944967	Outer membrane protein X		Up Regulated
priC	945071	Primosomal replication protein N''		Temporarly Down Regula
tesB	945074	Acyl-CoA thioesterase 2		Down Regulated
ycjY	945988	Uncharacterized protein ycjY	['Amino acid transport and metabolism']	Up Regulated
dmsD	945987	Twin-arginine leader-binding protein dmsD		Down Regulated
ydbD	945983	Uncharacterized protein ydbD	[]	Ambiguous/Unsorted
ftsP	944982	Protein sufI		Down Regulated
ykgF	944980	Uncharacterized electron transport protein ykgF	[]	Temporarly Up Regulated
frmR	944986	Transcriptional repressor frmR		Down Regulated
yahO	944985	Uncharacterized protein yahO	[' Building block biosynthesis']	Up Regulated
eutH	944979	Ethanolamine utilization protein eutH		Up Regulated
yecA	945061	Uncharacterized protein yecA	[]	Down Regulated
dxs	945060	1-deoxy-D-xylulose-5-phosphate synthase		Ambiguous/Unsorted
thiI	945067	Thiamine biosynthesis protein thiI		Ambiguous/Unsorted
ydcj	945991	Uncharacterized protein ydcJ		Up Regulated
panE	945065	2-dehydropantoate 2-reductase		Temporarly Down Regula
ispA	945064	Geranyltranstransferase		Ambiguous/Unsorted
xseB	945069	Exodeoxyribonuclease 7 small subunit		Ambiguous/Unsorted
ydcP	945993	Uncharacterized protease ydcP	['amino acid biosynthetic process']	Temporarly Up Regulated
narZ	945999	Respiratory nitrate reductase 2 alpha chain		Ambiguous/Unsorted
ydcH	945997	Uncharacterized protein ydcH	[' Channel type Transporters']	Up Regulated
cspG	945591	Cold shock-like protein cspG		Down Regulated
yccF	945594	Inner membrane protein yccF		Down Regulated
prpB	944990	Methylisocitrate lyase		Temporarly Up Regulated
torS	945595	Sensor protein torS; Sensor protein		Down Regulated
codA	944996	Cytosine deaminase; Protein ccdA		Down Regulated
frmA	944988	S-(hydroxymethyl)glutathione dehydrogenase		Temporarly Down Regula
pyrH	944989	Uridylate kinase		Ambiguous/Unsorted
yajD	945051	Uncharacterized protein yajD	[' Primary Active Transporters']	Down Regulated
yajR	945058	Inner membrane transport protein yajR		Temporarly Down Regula
ispF	945057	2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase		Ambiguous/Unsorted
McrB	949122	5-methylcytosine-specific restriction enzyme B		Temporarly Up Regulated
secF	949120	Protein-export membrane protein secF		Temporarly Down Regula
cutA	948660	Divalent-cation tolerance protein cutA		Up Regulated
yjeK	948662	Uncharacterized kamA family protein yjeK	['metabolic process']	Down Regulated
efp	948661	Elongation factor P		Ambiguous/Unsorted
yjeI	948664	Uncharacterized protein yjeI	['cell cycle', 'cell division']	Ambiguous/Unsorted
frdB	948666	Fumarate reductase iron-sulfur subunit		Up Regulated
groL	948665	60 kDa chaperonin		Temporarly Up Regulated
ribF	949129	Riboflavin biosynthesis protein ribF		Ambiguous/Unsorted
frdA	948667	Fumarate reductase flavoprotein subunit		Up Regulated
ampC	948669	Beta-lactamase		Down Regulated
lipB	945217	Octanoyltransferase		Down Regulated
entH	945215	Esterase ybdB		Up Regulated
ybdH	945212	Uncharacterized oxidoreductase ybdH	[]	Down Regulated
ybdL	945211	Aminotransferase ybdL		Down Regulated
blc	948670	Outer membrane lipoprotein blc		Up Regulated
orn	948675	Oligoribonuclease		Ambiguous/Unsorted
rcsF	949113	Protein rcsF		Ambiguous/Unsorted
yaeB	949112	UPF0066 protein yaeB		Ambiguous/Unsorted
psd	948673	Phosphatidylserine decarboxylase proenzyme		Ambiguous/Unsorted
poxA	948672	Putative lysyl-tRNA synthetase		Ambiguous/Unsorted
yjeM	948679	Inner membrane transporter yjeM		Up Regulated
yjeP	948676	Uncharacterized mscS family protein yjeP	['purine nucleotide biosynthetic process', 'biosynthetic process']	Ambiguous/Unsorted
lipA	945227	Lipoyl synthase		Ambiguous/Unsorted
plsC	947496	1-acyl-sn-glycerol-3-phosphate acyltransferase		Temporarly Down Regula
uspG	945229	Universal stress protein G		Up Regulated
dkgA	947495	2,5-diketo-D-gluconic acid reductase A		Up Regulated
tatE	945228	Sec-independent protein translocase protein tatE		Ambiguous/Unsorted
tdcA	947494	HTH-type transcriptional regulator tdcA		Up Regulated
yqhD	947493	Alcohol dehydrogenase yqhD		Up Regulated
dacA	945222	D-alanyl-D-alanine carboxypeptidase dacA		Down Regulated
ahpC	945225	Alkyl hydroperoxide reductase subunit C		Down Regulated
dsbG	945224	Thiol:disulfide interchange protein dsbG		Down Regulated
folD	945221	Bifunctional protein folD		Up Regulated

ybeD	945220	UPF0250 protein ybeD		Down Regulated
parC	947499	DNA topoisomerase 4 subunit A		Ambiguous/Unsorted
dsdX	949103	DsdX permease		Temporarly Down Regula
dcuB	948641	Anaerobic C4-dicarboxylate transporter dcuB		Ambiguous/Unsorted
dsbD	948649	Thiol:disulfide interchange protein dsbD		Temporarly Down Regula
cadA	948643	Lysine decarboxylase, inducible		Up Regulated
nanM	949106	N-acetylneuraminate epimerase		Up Regulated
lysU	948645	Lysyl-tRNA synthetase; Lysyl-tRNA synthetase, heat inducible		Down Regulated
gpr	947480	Uncharacterized protein yghZ		Up Regulated
yghZ	947480	Uncharacterized protein yghZ		Up Regulated
dpiB	945233	Sensor kinase dpiB		Temporarly Up Regulated
rfbC	947482	dTDP-4-dehydrorhamnose 3,5-epimerase		Down Regulated
rlmH	945239	Ribosomal RNA large subunit methyltransferase H		Up Regulated
ybeB	945237	Uncharacterized protein ybeB	[]	Up Regulated
citC	945231	[Citrate [pro-3S]-lyase] ligase		Ambiguous/Unsorted
fadR	948652	Fatty acid metabolism regulator protein		Down Regulated
yjdC	948650	HTH-type transcriptional regulator yjdC		Up Regulated
aspA	948658	Aspartate ammonia-lyase		Up Regulated
fxsA	948657	UPF0716 protein fxsA		Up Regulated
yghU	947472	Uncharacterized GST-like protein yghU	[]	Ambiguous/Unsorted
holE	947471	DNA polymerase III subunit theta		Temporarly Down Regula
nadD	945248	Nicotinate-nucleotide adenylyltransferase; Probable nicotinate-nucleotide adenylyltransferase		Ambiguous/Unsorted
gss	947474	Bifunctional glutathionylspermidine synthetase/amidase		Down Regulated
gsp	947474	Bifunctional glutathionylspermidine synthetase/amidase		Down Regulated
glcG	947473	Protein glcG		Up Regulated
yqhA	947479	UPF0114 protein yqhA		Up Regulated
yghA	947478	Uncharacterized oxidoreductase yghA	[]	Up Regulated
rlpA	945241	Rare lipoprotein A		Temporarly Down Regula
mrdA	945240	Penicillin-binding protein 2		Down Regulated
yjdM	948621	Protein phnA		Up Regulated
yjdN	948622	Protein phnB		Up Regulated
proP	948626	Proline/betaine transporter		Down Regulated
ybeL	945252	Uncharacterized protein ybeL	[]	Up Regulated
fhuC	945250	Iron(3+)-hydroxamate import ATP-binding protein fhuC		Ambiguous/Unsorted
slp	948022	Outer membrane protein slp		Up Regulated
serA	945258	D-3-phosphoglycerate dehydrogenase		Ambiguous/Unsorted
cmtA	945256	PTS system mannitol-specific cryptic EIICB component		Ambiguous/Unsorted
adiA	948638	Biodegradative arginine decarboxylase		Ambiguous/Unsorted
melR	948637	Melibiose operon regulatory protein		Ambiguous/Unsorted
dctA	948039	C4-dicarboxylate transport protein; Aerobic C4-dicarboxylate transport protein		Up Regulated
miaB	945260	(Dimethylallyl)adenosine tRNA methylthiotransferase miaB		Down Regulated
ubif	945261	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase		Down Regulated
yhjE	948032	Inner membrane metabolite transport protein yhjE		Down Regulated
yhjD	948033	Inner membrane protein yhjD		Ambiguous/Unsorted
treF	948037	Cytoplasmic trehalase		Up Regulated
yhjC	948035	Uncharacterized HTH-type transcriptional regulator yhjC	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Ambiguous/Unsorted
rpiR	948603	HTH-type transcriptional regulator rpiR		Down Regulated
yecJ	946388	Uncharacterized protein yecJ	[]	Ambiguous/Unsorted
torZ	946389	Trimethylamine-N-oxide reductase 2		Temporarly Up Regulated
phnJ	948606	Protein phnJ		Ambiguous/Unsorted
phnP	948600	Protein phnP		Ambiguous/Unsorted
rpiB	948602	Ribose-5-phosphate isomerase B		Down Regulated
cmoA	946380	tRNA (cmo5U34)-methyltransferase		Ambiguous/Unsorted
yecR	946386	Uncharacterized protein yecR	['Inorganic ion transport and metabolism', ' Adaptation to stress', 'iron ion transport']	Down Regulated
cmoB	946387	tRNA (mo5U34)-methyltransferase		Down Regulated
yecD	946384	Isochorismatase family protein yecD; Uncharacterized isochoris	[]	Temporarly Up Regulated
pitA	948009	Low-affinity inorganic phosphate transporter 1		Down Regulated
seqA	945272	Protein seqA		Ambiguous/Unsorted
yhiQ	948005	UPF0341 protein yhiQ		Ambiguous/Unsorted
rfbB	945276	dTDP-glucose 4,6-dehydratase		Down Regulated
erfK	945273	Protein erfK/srfK		Ambiguous/Unsorted
uspA	948007	Universal stress protein A		Ambiguous/Unsorted
iscR	945279	HTH-type transcriptional regulator iscR		Down Regulated
yhiI	948003	Uncharacterized protein yhiI	[' Protection']	Temporarly Up Regulated
trmJ	948610	tRNA (cytidine/uridine-2'-O-)-methyltransferase trmJ		Down Regulated

flhB	946391	Flagellar biosynthetic protein flhB		Down Regulated
cheZ	946392	Chemotaxis protein cheZ		Up Regulated
cheB	946394	Chemotaxis response regulator protein-glutamate methylesterase		Down Regulated
cheR	946396	Chemotaxis protein methyltransferase		Temporarly Up Regulated
tap	946397	Methyl-accepting chemotaxis protein IV		Ambiguous/Unsorted
mprA	945282	Transcriptional repressor mprA		Ambiguous/Unsorted
arsC	948018	Arsenate reductase		Temporarly Up Regulated
yhiD	948019	Uncharacterized protein yhiD	[]	Ambiguous/Unsorted
nagC	945285	N-acetylglucosamine repressor		Down Regulated
flhA	946390	Flagellar biosynthesis protein flhA		Down Regulated
yhiR	948012	Uncharacterized protein yhiR	[]	Ambiguous/Unsorted
phoH	948010	Protein phoH		Temporarly Up Regulated
dut	948607	Deoxyuridine 5'-triphosphate nucleotidohydrolase		Ambiguous/Unsorted
dppD	948065	Dipeptide transport ATP-binding protein dppD		Down Regulated
dppB	948063	Dipeptide transport system permease protein dppB		Ambiguous/Unsorted
eptB	948068	b3546; ECS88_3965; ECIAI39_4054; EC55989_3997; E2348C_3793; ECED1_4224; ECUMN_4058; ECDH10B_3725; ECIAI1_3705		Temporarly Down Regula
gabT	948067	4-aminobutyrate aminotransferase		Up Regulated
yfeD	946865	Uncharacterized protein yfeD	[]	Up Regulated
yejO	946867	b2190; E2348C_2336; ECDH10B_2348; Z3449; ECIAI39_2330; APECO1_4367; UTI89_C2469; EC55989_2444; EC55989_2445; ECUMN_2527; ECIAI1_2272; ECIAI1_2273		Ambiguous/Unsorted
yfeA	946864	Uncharacterized protein yfeA	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'regulation of tra	Down Regulated
gabD	948060	Succinate-semialdehyde dehydrogenase [NADP+]		Up Regulated
yiaD	948075	Inner membrane lipoprotein yiaD		Up Regulated
csiD	948076	Protein csiD		Ambiguous/Unsorted
yfeK	946876	Uncharacterized protein yfeK	['Defense mechanisms', ' Primary Active Transporters', ' Protection']	Down Regulated
cspA	948070	Cold shock protein cspA		Down Regulated
yiaF	948072	Uncharacterized protein yiaF	['Carbohydrate transport and metabolism', ' Carbon compound utilization', 'phosphoenolpyruvate dependent sugar phosphotransfera	Temporarly Up Regulated
yhjK	948048	c4341; EC55989_3976; ECDH10B_3706; APECO1_2919; ECIAI1_3680; b3529; ECIAI39_4032; ECED1_4207; ECS88_3943; ECUMN_4036; UTI89_C4061; Z4943; E2348C_3771		Temporarly Up Regulated
bcsZ	948046	Endoglucanase		Up Regulated
bcsB	948045	Cyclic di-GMP-binding protein		Ambiguous/Unsorted
crr	946880	Glucose-specific phosphotransferase enzyme IIA component		Up Regulated
yhjG	948043	Uncharacterized protein yhjG	['Lipid transport and metabolism']	Temporarly Down Regula
pdxK	946881	Pyridoxine kinase		Down Regulated
kdgK	948041	2-dehydro-3-deoxygluconokinase		Ambiguous/Unsorted
ptsH	946886	Phosphocarrier protein HPr		Temporarly Down Regula
yfeS	946887	Uncharacterized protein yfeS	[]	Ambiguous/Unsorted
cysM	946888	Cysteine synthase B; Cysteine synthase		Down Regulated
cysA	946889	Sulfate/thiosulfate import ATP-binding protein cysA		Down Regulated
yhjJ	948040	Protein yhjJ		Ambiguous/Unsorted
dppF	948056	Dipeptide transport ATP-binding protein dppF		Down Regulated
bcsG	948058	Uncharacterized protein yhjU		Temporarly Up Regulated
murQ	946893	N-acetylmuramic acid 6-phosphate etherase		Ambiguous/Unsorted
csiR	948055	Uncharacterized HTH-type transcriptional regulator ygaE		Temporarly Up Regulated
nupC	946895	Nucleoside permease nupC		Down Regulated
ucpA	946898	Oxidoreductase ucpA		Up Regulated
bcsE	948050	Uncharacterized protein yhjS		Ambiguous/Unsorted
fadL	946820	Long-chain fatty acid transport protein		Up Regulated
sixA	946815	Phosphohistidine phosphatase sixA		Down Regulated
fecD	946816	Fe(3+) dicitrate transport system permease protein fecD		Down Regulated
emrY	946835	Multidrug resistance protein Y		Down Regulated
efeO	945603	UPF0409 protein ycdO		Up Regulated
putP	945602	Sodium/proline symporter		Ambiguous/Unsorted
yceA	945601	UPF0176 protein yceA		Down Regulated
putA	945600	Bifunctional protein putA		Down Regulated
frc	946842	Formyl-coenzyme A transferase		Down Regulated
evgS	946844	Sensor protein evgS; Sensor protein		Ambiguous/Unsorted
malS	948088	Alpha-amylase		Down Regulated
xylR	948086	Xylose operon regulatory protein		Ambiguous/Unsorted
yiaJ	948084	HTH-type transcriptional regulator yiaJ		Down Regulated
dsdA	946837	D-serine dehydratase; D-serine dehydratase 1		Up Regulated
fecB	946838	Fe(3+) dicitrate-binding periplasmic protein		Temporarly Up Regulated
fecI	946839	Probable RNA polymerase sigma factor fecI; RNA polymerase sigma factor		Ambiguous/Unsorted
frya	946852	Multiphosphoryl transfer protein 1		Up Regulated
yfdZ	946850	Uncharacterized aminotransferase yfdZ	[]	Down Regulated
yfeC	946857	Uncharacterized protein yfeC	[]	Up Regulated
fepC	945201	Ferric enterobactin transport ATP-binding protein fepC		Up Regulated

stfR	945207	Side tail fiber protein homolog from lambdoid prophage Rac		Ambiguous/Unsorted
yceM	945204	Virulence factor mviM homolog		Temporarly Down Regula
xylF	948090	D-xylose-binding periplasmic protein		Up Regulated
lpcA	949134	Phosphoheptose isomerase		Ambiguous/Unsorted
lpxP	946847	Protein ddg		Up Regulated
secD	949133	Protein-export membrane protein secD		Ambiguous/Unsorted
tgt	949130	Queuine tRNA-ribosyltransferase		Ambiguous/Unsorted
malZ	949131	Maltodextrin glucosidase		Ambiguous/Unsorted
leuD	945642	3-isopropylmalate dehydratase small subunit		Ambiguous/Unsorted
flgL	945646	Flagellar hook-associated protein 3		Down Regulated
flgG	945647	Flagellar basal-body rod protein flgG		Down Regulated
ftnA	946410	Ferritin-1		Temporarly Down Regula
yecM	946415	Protein yecM		Temporarly Up Regulated
ybeX	946417	Magnesium and cobalt efflux protein corC		Down Regulated
ftnB	946407	Ferritin-like protein 2		Ambiguous/Unsorted
araG	946408	Arabinose import ATP-binding protein araG		Ambiguous/Unsorted
araF	946409	L-arabinose-binding periplasmic protein		Up Regulated
rluC	945637	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase C		Ambiguous/Unsorted
ydcS	946005	Putative ABC transporter periplasmic-binding protein ydcS		Up Regulated
flgF	945639	Flagellar basal-body rod protein flgF		Down Regulated
yncE	946006	Uncharacterized protein yncE	['Translation ribosomal structure and biogenesis', 'rRNA processing']	Up Regulated
ydcT	946007	Uncharacterized ABC transporter ATP-binding protein ydcT		Temporarly Up Regulated
yceF	945631	Maf-like protein yceF 1; Maf-like protein yceF		Ambiguous/Unsorted
yacG	945630	UPF0243 zinc-binding protein yacG		Up Regulated
flgE	945636	Flagellar hook protein flgE		Down Regulated
yceH	945633	UPF0502 protein yceH		Up Regulated
flgN	945634	Flagella synthesis protein flgN		Ambiguous/Unsorted
otsA	946405	Alpha,alpha-trehalose-phosphate synthase [UDP-forming]		Up Regulated
uspC	946404	Universal stress protein C		Up Regulated
yncB	946012	Putative NADP-dependent oxidoreductase yncB		Up Regulated
ycjG	946013	Z2450; ECUMN_1620; ECED1_1533; ECDH10B_1444; b1325; UTI89_C1596; E2348C_1518; ECIAI1_1350; c1797; APECO1_478; ECS88_1467; ECIAI39_1677; EC55989_1489		Up Regulated
araB	946017	Ribulokinase		Up Regulated
yncD	946015	Probable tonB-dependent receptor yncD		Down Regulated
aroP	946018	Aromatic amino acid transport protein aroP		Temporarly Down Regula
ansP	946019	L-asparagine permease		Temporarly Down Regula
yfcM	946807	Uncharacterized protein yfcM	['Cell wall membrane envelope biogenesis']	Down Regulated
opgH	945624	Glucans biosynthesis glucosyltransferase H		Ambiguous/Unsorted
yaeQ	946809	Uncharacterized protein yaeQ	['Inorganic ion transport and metabolism', 'DNA repair', 'DNA recombination', 'response to DNA damage stimulus']	Down Regulated
yfcL	946804	Uncharacterized protein yfcL	['Cell wall membrane envelope biogenesis', 'amino acid biosynthetic process', 'aromatic amino acid family biosynthetic process']	Down Regulated
ylbG	946803	b0502; ECDH10B_0458		Up Regulated
ribD	945620	Riboflavin biosynthesis protein ribD		Up Regulated
glnP	945621	Glutamine transport system permease protein glnP		Down Regulated
mepA	946812	Penicillin-insensitive murein endopeptidase		Down Regulated
cyoB	945615	Ubiquinol oxidase subunit 1		Temporarly Down Regula
rplY	945618	50S ribosomal protein L25		Down Regulated
yfjG	945614	UPF0083 protein yfjG		Down Regulated
yhhJ	947991	Inner membrane transport permease yhhJ		Temporarly Down Regula
msyB	945612	Acidic protein msyB		Up Regulated
rbbA	947998	Uncharacterized ABC transporter ATP-binding protein yhiH		Down Regulated
rhsB	947994	Protein rhsB		Down Regulated
nikR	947995	Nickel-responsive regulator		Temporarly Down Regula
yhiN	947996	Uncharacterized protein yhiN	[]	Up Regulated
slyB	946801	Outer membrane lipoprotein slyB		Ambiguous/Unsorted
mnm	946800	tRNA 5-methylaminomethyl-2-thiouridine biosynthesis bifunctional protein mnmC		Temporarly Up Regulated
mfd	945681	Transcription-repair-coupling factor		Ambiguous/Unsorted
pspF	945683	Psp operon transcriptional activator		Temporarly Up Regulated
potD	945682	Spermidine/putrescine-binding periplasmic protein		Up Regulated
cobB	945687	NAD-dependent deacetylase		Up Regulated
panD	945686	Aspartate 1-decarboxylase		Down Regulated
nudJ	945689	Phosphatase nudJ		Down Regulated
aldA	945672	Lactaldehyde dehydrogenase		Up Regulated
nagZ	945671	Beta-hexosaminidase		Temporarly Up Regulated
lolD	945670	Lipoprotein-releasing system ATP-binding protein lolD		Ambiguous/Unsorted
ycfP	945676	UPF0227 protein ycfP		Ambiguous/Unsorted
yeaO	945675	Uncharacterized protein yeaO	[' Primary Active Transporters', 'electron transport']	Up Regulated

lolC	945673	Lipoprotein-releasing system transmembrane protein lolC		Ambiguous/Unsorted
flgB	945678	Flagellar basal-body rod protein flgB		Down Regulated
yagU	945677	Inner membrane protein yagU		Ambiguous/Unsorted
parE	947501	DNA topoisomerase 4 subunit B		Down Regulated
ybiX	947502	PKHD-type hydroxylase ybiX		Up Regulated
ygiN	947506	Probable quinol monooxygenase ygiN		Up Regulated
holB	945661	DNA polymerase III subunit delta'		Ambiguous/Unsorted
yceG	945660	Uncharacterized protein yceG	[]	Temporarly Up Regulate
pck	945667	Phosphoenolpyruvate carboxykinase [ATP]		Up Regulated
ycfS	945666	Uncharacterized protein ycfS	[]	Down Regulated
cspD	945669	Cold shock-like protein cspD		Temporarly Up Regulate
tmk	945663	Thymidylate kinase		Down Regulated
lolE	945665	Lipoprotein-releasing system transmembrane protein lolE		Ambiguous/Unsorted
rpmF	945657	50S ribosomal protein L32		Down Regulated
ycfH	945656	Uncharacterized deoxyribonuclease ycfH	[]	Down Regulated
emtA	945655	Endo-type membrane-bound lytic murein transglycosylase A		Down Regulated
deoD	945654	Purine nucleoside phosphorylase deoD-type		Up Regulated
pqiB	945653	Paraquat-inducible protein B		Temporarly Down Regula
pspE	945652	Phage shock protein E		Temporarly Up Regulate
flgK	945648	Flagellar hook-associated protein 1		Down Regulated
fhuE	945649	FhuE receptor		Temporarly Up Regulate
gntK	947937	Thermoresistant gluconokinase		Temporarly Up Regulate
glpG	947936	Rhomboid protease glpG		Ambiguous/Unsorted
cusB	945189	Cation efflux system protein cusB		Down Regulated
glgS	947533	Glycogen synthesis protein glgS		Ambiguous/Unsorted
entF	945184	Enterobactin synthetase component F		Up Regulated
hemH	947532	Ferrochelatase		Up Regulated
fes	945181	Enterochelin esterase		Ambiguous/Unsorted
flgI	947534	Flagellar P-ring protein		Down Regulated
cusF	945188	Cation efflux system protein cusF		Down Regulated
ompT	945185	Protease 7		Up Regulated
fepB	947538	Ferrienterobactin-binding periplasmic protein		Up Regulated
yeeN	946493	UPF0082 protein yeeN		Down Regulated
fepE	945180	Ferric enterobactin transport protein fepE		Temporarly Up Regulate
shiA	946495	Shikimate transporter		Temporarly Up Regulate
glgB	947940	1,4-alpha-glucan-branching enzyme		Ambiguous/Unsorted
ydhJ	946499	Uncharacterized protein ydhJ		Ambiguous/Unsorted
glgX	947941	Glycogen debranching enzyme		Temporarly Up Regulate
yeeJ	946498	Uncharacterized protein yeeJ		Temporarly Up Regulate
glgC	947942	Glucose-1-phosphate adenylyltransferase		Up Regulated
yhhX	947944	Uncharacterized oxidoreductase yhhX	[]	Ambiguous/Unsorted
yhhW	947945	Protein yhhW		Ambiguous/Unsorted
gntR	947946	HTH-type transcriptional regulator gntR		Ambiguous/Unsorted
rtcR	947928	Transcriptional regulatory protein rtcR		Ambiguous/Unsorted
glpR	947926	Glycerol-3-phosphate regulon repressor		Ambiguous/Unsorted
ahpF	947540	Alkyl hydroperoxide reductase subunit F		Ambiguous/Unsorted
rtcB	947929	Protein rtcB		Temporarly Up Regulate
rnk	947546	Regulator of nucleoside diphosphate kinase		Ambiguous/Unsorted
folB	947544	Dihydroneopterin aldolase		Ambiguous/Unsorted
quuD	945177	Antitermination protein Q homolog from lambdoid prophage DLP12		Temporarly Down Regula
yodA	946480	Metal-binding protein yodA		Up Regulated
zinT	946480	Metal-binding protein yodA		Up Regulated
ydiQ	946482	Putative electron transfer flavoprotein subunit ydiQ		Temporarly Up Regulate
yedY	946484	UPF0190 protein yedY		Down Regulated
hiuH	946485	5-hydroxyisourate hydrolase		Ambiguous/Unsorted
damX	947930	Protein damX		Ambiguous/Unsorted
yedV	946487	Sensor protein; Putative sensor-like histidine kinase yedV		Ambiguous/Unsorted
glgP	947931	Phosphorylase; Glycogen phosphorylase		Ambiguous/Unsorted
mtfA	946489	Protein mtfA		Up Regulated
glpD	947934	Aerobic glycerol-3-phosphate dehydrogenase		Up Regulated
glpE	947935	Thiosulfate sulfurtransferase glpE		Down Regulated
glgA	947932	Glycogen synthase		Ambiguous/Unsorted
feoB	947919	Ferrous iron transport protein B		Temporarly Up Regulate
cpdA	947515	Protein icc		Down Regulated
araA	947511	L-arabinose isomerase		Up Regulated

fhuD	947510	Iron(3+)-hydroxamate-binding protein fhuD		Up Regulated
ykgH	947513	Uncharacterized protein ykgH	[]	Ambiguous/Unsorted
yafC	947507	Uncharacterized HTH-type transcriptional regulator yafC	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
malT	947921	HTH-type transcriptional regulator malT		Down Regulated
malQ	947923	4-alpha-glucanotransferase		Temporarly Down Regula
gntT	947924	High-affinity gluconate transporter		Down Regulated
lptA	947920	Lipopolysaccharide export system protein lptA		Down Regulated
feoA	947909	Ferrous iron transport protein A		Ambiguous/Unsorted
mrcA	947907	Penicillin-binding protein 1A		Down Regulated
nudE	947906	ADP compounds hydrolase nudE		Ambiguous/Unsorted
yrfF	947905	Putative membrane protein igaA homolog		Down Regulated
yrfG	947904	Uncharacterized protein yrfG	[' Adaptation to stress', 'protein folding']	Down Regulated
elbB	947903	Enhancing lycopene biosynthesis protein 2		Ambiguous/Unsorted
mhpA	945197	3-(3-hydroxy-phenyl)propionate/3-hydroxycinnamic acid hydroxylase		Ambiguous/Unsorted
prpC	947528	2-methylcitrate synthase		Ambiguous/Unsorted
ygcF	947527	Uncharacterized protein ygcF	[]	Down Regulated
iscX	945196	Protein iscX		Down Regulated
ribB	947526	3,4-dihydroxy-2-butanone 4-phosphate synthase		Ambiguous/Unsorted
pheP	945199	Phenylalanine-specific permease		Down Regulated
atoD	947525	Acetate CoA-transferase subunit alpha		Up Regulated
thrC	945198	Threonine synthase		Down Regulated
fepA	945193	Ferrienterobactin receptor		Up Regulated
yqiC	947524	Uncharacterized protein yqiC	[]	Up Regulated
ygiL	947522	Uncharacterized fimbrial-like protein ygiL	['Replication recombination and repair']	Ambiguous/Unsorted
rpmA	945190	50S ribosomal protein L27		Down Regulated
cusA	945191	Cation efflux system protein cusA		Temporarly Up Regulated
ycjN	945696	Putative ABC transporter periplasmic-binding protein ycjN		Ambiguous/Unsorted
yqiB	947518	Uncharacterized protein yqiB	['Replication recombination and repair']	Down Regulated
nudF	947519	ADP-ribose pyrophosphatase		Down Regulated
hslR	947912	Heat shock protein 15		Ambiguous/Unsorted
potB	945692	Spermidine/putrescine transport system permease protein potB		Down Regulated
ompR	947913	Transcriptional regulatory protein ompR		Ambiguous/Unsorted
yrbL	947910	Uncharacterized protein yrbL	['Carbohydrate transport and metabolism', ' Macromolecules cellular constituent biosynthesis', ' Central intermediary metabolism']	Down Regulated
hflD	945693	ECIAI1_1170; ECS88_1147; ECDH10B_1204; b1132; ECIAI39_2005; ECED1_1276; E2348C_1273; ECUMN_1376; EC55989_1245		Temporarly Down Regula
yhgF	947911	Protein yhgF		Down Regulated
rpsU	947577	30S ribosomal protein S21		Down Regulated
dnaG	947570	DNA primase		Up Regulated
ypfH	947571	Esterase ypfH		Up Regulated
cbpA	947572	Curved DNA-binding protein		Up Regulated
holA	947573	DNA polymerase III subunit delta		Down Regulated
btuF	947574	Vitamin B12-binding protein		Ambiguous/Unsorted
dcrB	947983	Protein dcrB		Ambiguous/Unsorted
thiD	946459	Phosphomethylpyrimidine kinase		Down Regulated
nikD	947989	Nickel import ATP-binding protein nikD		Ambiguous/Unsorted
alsE	948595	D-allulose-6-phosphate 3-epimerase		Ambiguous/Unsorted
yjcS	948597	Uncharacterized protein yjcS	[]	Up Regulated
gltP	948591	Proton glutamate symport protein		Down Regulated
argS	946452	Arginyl-tRNA synthetase		Ambiguous/Unsorted
ribE	946453	6,7-dimethyl-8-ribityllumazine synthase		Up Regulated
rlmG	947589	Ribosomal RNA large subunit methyltransferase G		Down Regulated
gutQ	947587	Protein gutQ		Up Regulated
yqjH	947582	Uncharacterized protein yqjH	[' Adaptation to stress', 'ion transport', 'iron ion transport']	Up Regulated
ftsX	947969	Cell division protein ftsX		Ambiguous/Unsorted
nuoK	947580	NADH-quinone oxidoreductase subunit K		Down Regulated
ebgR	947586	HTH-type transcriptional regulator ebgR		Temporarly Up Regulated
ebgA	947583	Evolved beta-galactosidase subunit alpha		Ambiguous/Unsorted
yqjI	947584	Uncharacterized protein yqjI	[]	Temporarly Up Regulated
yhhM	947975	Uncharacterized protein yhhM	[]	Temporarly Up Regulated
zntA	947972	Lead, cadmium, zinc and mercury-transporting ATPase		Down Regulated
acpT	947979	4'-phosphopantetheinyl transferase acpT		Up Regulated
yjcO	948586	Uncharacterized protein yjcO	[]	Temporarly Up Regulated
hemD	948587	Uroporphyrinogen-III synthase		Down Regulated
rdgC	948585	Recombination-associated protein rdgC		Ambiguous/Unsorted
livJ	947971	Leu/Ile/Val-binding protein		Up Regulated
mdtO	948582	Multidrug resistance protein mdtO		Down Regulated

rpoH	947970	RNA polymerase sigma-32 factor; RNA polymerase sigma factor		Temporarly Down Regula
dnaQ	946441	DNA polymerase III subunit epsilon		Down Regulated
ygiF	947554	Uncharacterized protein ygiF	['Amino acid transport and metabolism']	Down Regulated
glnE	947552	Glutamate-ammonia-ligase adenylyltransferase		Ambiguous/Unsorted
cca	947553	Multifunctional CCA protein		Up Regulated
yrbA	947958	Uncharacterized protein yrbA	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid biosynthetic process']	Ambiguous/Unsorted
livM	947966	High-affinity branched-chain amino acid transport system permease protein livM		Temporarly Up Regulated
yjcE	948577	Uncharacterized Na(+)/H(+) exchanger yjcE	['rRNA processing']	Down Regulated
ydgD	946436	Uncharacterized serine protease ydgD	['response to stress']	Up Regulated
ftsE	947968	Cell division ATP-binding protein ftsE		Down Regulated
ugpB	947962	sn-glycerol-3-phosphate-binding periplasmic protein ugpB		Up Regulated
livF	947961	High-affinity branched-chain amino acid transport ATP-binding protein livF		Ambiguous/Unsorted
yfdE	946432	Uncharacterized protein yfdE	['metabolic process']	Temporarly Down Regula
livK	947964	Leucine-specific-binding protein		Ambiguous/Unsorted
yhhK	947963	Uncharacterized protein yhhK	[' Carbon compound utilization', ' Metabolism of other compounds']	Down Regulated
ybeY	946430	Putative metalloprotease ybeY		Ambiguous/Unsorted
ssb	948570	Single-stranded DNA-binding protein		Ambiguous/Unsorted
nrfA	948571	Cytochrome c-552		Ambiguous/Unsorted
acs	948572	Acetyl-coenzyme A synthetase		Up Regulated
azoR	947569	FMN-dependent NADH-azoreductase		Ambiguous/Unsorted
rpoD	947567	RNA polymerase sigma factor rpoD; RNA polymerase sigma factor		Temporarly Up Regulated
ttdR	947562	HTH-type transcriptional activator ttdR		Ambiguous/Unsorted
yfcS	946418	Uncharacterized fimbrial chaperone yfcS	['Cell motility', 'Intracellular trafficking secretion and vesicular transport', ' Macromolecules cellular constituent biosynthesis']	Ambiguous/Unsorted
mug	947560	G/U mismatch-specific DNA glycosylase		Temporarly Up Regulated
ggt	947947	Gamma-glutamyltranspeptidase		Temporarly Down Regula
yrhB	947948	Uncharacterized protein yrhB	[]	Down Regulated
yhhA	947956	Uncharacterized protein yhhA	['Cell cycle control cell division chromosome partitioning', ' Cell division', 'cell cycle', 'cell division']	Temporarly Up Regulated
fecA	946427	Fe(3+) dicitrate transport protein fecA		Up Regulated
ugpQ	947955	Glycerophosphoryl diester phosphodiesterase		Ambiguous/Unsorted
yrbB	947954	Uncharacterized protein yrbB	['Cell wall membrane envelope biogenesis', ' Macromolecules cellular constituent biosynthesis', 'cell cycle', 'cell division']	Ambiguous/Unsorted
mlaB	947954	Uncharacterized protein yrbB		Ambiguous/Unsorted
ugpC	947953	sn-glycerol-3-phosphate import ATP-binding protein ugpC		Ambiguous/Unsorted
uvrY	946424	Response regulator uvrY		Ambiguous/Unsorted
yjbR	948560	Uncharacterized protein yjbR	['Amino acid transport and metabolism', ' Central intermediary metabolism', 'amino acid biosynthetic process', 'biosynthetic process',	Up Regulated
alr	948564	Alanine racemase, biosynthetic; Alanine racemase		Up Regulated
yjcD	948565	Putative permease yjcD		Temporarly Up Regulated
aphA	948562	Class B acid phosphatase		Down Regulated
xylE	948529	D-xylose-proton symporter		Ambiguous/Unsorted
hepA	948523	RNA polymerase-associated protein rapA		Ambiguous/Unsorted
rapA	948523	RNA polymerase-associated protein rapA		Ambiguous/Unsorted
iclR	948524	Acetate operon repressor		Ambiguous/Unsorted
yjbB	948521	Uncharacterized protein yjbB	[]	Up Regulated
pepE	948520	Peptidase E		Ambiguous/Unsorted
ubiE	948926	Ubiquinone/menaquinone biosynthesis methyltransferase ubiE		Ambiguous/Unsorted
recJ	947367	Single-stranded-DNA-specific exonuclease recJ		Temporarly Up Regulated
prfB	947369	Peptide chain release factor 2		Ambiguous/Unsorted
yccJ	948930	Uncharacterized protein yccJ	[' Macromolecules cellular constituent biosynthesis']	Up Regulated
nadA	945351	Quinolinate synthetase A		Down Regulated
galT	945357	Galactose-1-phosphate uridylyltransferase		Temporarly Up Regulated
ybgS	945356	Uncharacterized protein ybgS	['Inorganic ion transport and metabolism', ' Electrochemical potential driven transporters', 'ion transport']	Temporarly Up Regulated
xerD	947362	Tyrosine recombinase xerD		Down Regulated
galE	945354	UDP-glucose 4-epimerase		Ambiguous/Unsorted
fldB	947361	Flavodoxin-2		Down Regulated
rluF	948519	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase F		Temporarly Up Regulated
ispB	947364	Octaprenyl-diphosphate synthase		Temporarly Down Regula
dsbC	947363	Thiol:disulfide interchange protein dsbC		Up Regulated
galK	945358	Galactokinase		Up Regulated
malE	948538	Maltose-binding periplasmic protein		Up Regulated
malK	948537	Maltose/maltodextrin import ATP-binding protein malK		Up Regulated
ycfM	948536	Uncharacterized protein ycfM	['Cell wall membrane envelope biogenesis']	Up Regulated
malF	948532	Maltose transport system permease protein malF		Up Regulated
yjjX	948919	UPF0244 protein yjjX		Ambiguous/Unsorted
ytjC	948918	Probable phosphoglycerate mutase gpmB		Down Regulated
trpR	948917	Trp operon repressor		Up Regulated
rob	948916	Right origin-binding protein		Ambiguous/Unsorted

creB	948922	Transcriptional regulatory protein creB		Temporarly Up Regulated
mocA	947356	Uncharacterized protein ygfJ		Ambiguous/Unsorted
ygfJ	947356	Uncharacterized protein ygfJ	['electron transport']	Ambiguous/Unsorted
creA	948920	Protein creA		Ambiguous/Unsorted
modC	945362	Molybdenum import ATP-binding protein modC		Temporarly Up Regulated
modA	945364	Molybdate-binding periplasmic protein		Up Regulated
modF	945368	Putative molybdenum transport ATP-binding protein modF		Temporarly Down Regula
qseB	945369	Transcriptional regulatory protein qseB		Down Regulated
ubiC	948545	Chorismate--pyruvate lyase		Down Regulated
lexA	948544	LexA repressor		Ambiguous/Unsorted
malM	948547	Maltose operon periplasmic protein		Temporarly Up Regulated
yqfB	947380	UPF0267 protein yqfB		Temporarly Up Regulated
hinT	948549	HIT-like protein hinT		Up Regulated
rpsP	947103	30S ribosomal protein S16		Down Regulated
lamB	948548	Maltoporin		Up Regulated
yfiL	947106	Uncharacterized protein yfiL	['Replication recombination and repair', 'DNA recombination']	Up Regulated
recN	947105	DNA repair protein recN		Up Regulated
mtn	948542	5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase		Ambiguous/Unsorted
aldB	948104	Aldehyde dehydrogenase B		Up Regulated
yagT	945330	Putative xanthine dehydrogenase yagT iron-sulfur-binding subunit		Up Regulated
paoA	945330	Putative xanthine dehydrogenase yagT iron-sulfur-binding subunit		Up Regulated
yiaU	948107	Uncharacterized HTH-type transcriptional regulator yiaU	[]	Temporarly Up Regulated
visC	947389	Protein visC		Temporarly Up Regulated
chbB	945339	N,N'-diacetylchitobiose-specific phosphotransferase enzyme IIB component		Up Regulated
ubiH	947388	2-octaprenyl-6-methoxyphenol hydroxylase		Down Regulated
ybbO	945337	Uncharacterized oxidoreductase ybbO	[]	Ambiguous/Unsorted
thiL	947387	Thiamine-monophosphate kinase		Down Regulated
ygfY	947382	UPF0350 protein ygfY		Ambiguous/Unsorted
sapF	945335	Peptide transport system ATP-binding protein sapF		Ambiguous/Unsorted
lyxK	948101	L-xylulose/3-keto-L-gulonate kinase		Up Regulated
allR	945333	HTH-type transcriptional repressor allR		Ambiguous/Unsorted
selB	948103	Selenocysteine-specific elongation factor		Down Regulated
cueR	945332	HTH-type transcriptional regulator cueR		Ambiguous/Unsorted
aegA	947383	Protein aegA		Ambiguous/Unsorted
dusA	948558	tRNA-dihydrouridine synthase A		Ambiguous/Unsorted
qorA	948556	Quinone oxidoreductase		Ambiguous/Unsorted
dnaB	948555	Replicative DNA helicase		Ambiguous/Unsorted
yjbJ	948553	UPF0337 protein yjbJ		Up Regulated
zur	948552	Zinc uptake regulation protein		Down Regulated
srlR	948942	Glucitol operon repressor		Ambiguous/Unsorted
mtlA	948118	PTS system mannitol-specific EIICBA component		Up Regulated
mtlD	948117	Mannitol-1-phosphate 5-dehydrogenase		Ambiguous/Unsorted
cydA	945341	Cytochrome d ubiquinol oxidase subunit 1		Ambiguous/Unsorted
yibK	948119	Uncharacterized tRNA/rRNA methyltransferase yibK		Temporarly Down Regula
yibH	948110	Inner membrane protein yibH		Ambiguous/Unsorted
yceB	947377	Uncharacterized lipoprotein yceB	['electron transport']	Ambiguous/Unsorted
betB	947376	Betaine aldehyde dehydrogenase		Temporarly Down Regula
lysS	947372	Lysyl-tRNA synthetase; Lysyl-tRNA synthetase, heat inducible		Down Regulated
sodC	945343	Superoxide dismutase [Cu-Zn]		Up Regulated
yibF	948113	Uncharacterized GST-like protein yibF	[]	Temporarly Up Regulated
alkA	947371	DNA-3-methyladenine glycosylase 2		Down Regulated
astA	946261	Arginine N-succinyltransferase		Up Regulated
rluA	946262	Ribosomal large subunit pseudouridine synthase A; Pseudouridine synthase		Up Regulated
astD	946260	N-succinylglutamate 5-semialdehyde dehydrogenase		Up Regulated
chbF	946266	6-phospho-beta-glucosidase		Ambiguous/Unsorted
moaD	945398	Molybdopterin-converting factor subunit 1		Ambiguous/Unsorted
selA	948124	L-seryl-tRNA(Sec) selenium transferase		Down Regulated
moaE	945399	Molybdopterin-converting factor subunit 2		Up Regulated
gpsA	948125	Glycerol-3-phosphate dehydrogenase [NAD(P)+]		Ambiguous/Unsorted
rhsA	948120	Protein rhsA		Up Regulated
lldD	948121	L-lactate dehydrogenase [cytochrome]		Down Regulated
ybhK	945390	UPF0052 protein ybhK		Down Regulated
cysE	948126	Serine acetyltransferase		Ambiguous/Unsorted
MoaB	945396	Molybdenum cofactor biosynthesis protein B		Ambiguous/Unsorted
moaC	945397	Molybdenum cofactor biosynthesis protein C		Ambiguous/Unsorted

yibQ	948128	Uncharacterized protein yibQ	['proteolysis']	Down Regulated
envC	948129	Uncharacterized protein yibP		Down Regulated
ynjA	946270	Uncharacterized protein ynjA	[' Primary Active Transporters']	Down Regulated
ynjB	946271	Protein ynjB		Up Regulated
ydjF	946272	Uncharacterized HTH-type transcriptional regulator ydjF	['Transcription', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
pncA	946276	Pyrazinamidase/nicotinamidase		Down Regulated
nudG	946277	CTP pyrophosphohydrolase		Ambiguous/Unsorted
ansA	946278	L-asparaginase 1		Ambiguous/Unsorted
rfaF	948135	ADP-heptose--LPS heptosyltransferase 2		Ambiguous/Unsorted
ypdB	947395	Uncharacterized response regulatory protein ypdB	[]	Up Regulated
rfaC	948136	Lipopolysaccharide heptosyltransferase 1		Ambiguous/Unsorted
xylB	948133	Xylulose kinase		Up Regulated
gcvH	947393	Glycine cleavage system H protein		Ambiguous/Unsorted
yggE	947398	Uncharacterized protein yggE	['Translation ribosomal structure and biogenesis']	Up Regulated
grxC	948132	Glutaredoxin-3		Up Regulated
gpmI	948130	2,3-bisphosphoglycerate-independent phosphoglycerate mutase		Down Regulated
tdh	948139	L-threonine 3-dehydrogenase		Ambiguous/Unsorted
kbl	948138	2-amino-3-ketobutyrate coenzyme A ligase		Down Regulated
cusC	946288	Cation efflux system protein cusC		Ambiguous/Unsorted
yjjU	948906	Uncharacterized protein yjjU	[]	Down Regulated
ybgC	948907	Acyl-CoA thioester hydrolase ybgC		Down Regulated
yafD	946286	UPF0294 protein yafD		Down Regulated
slt	948908	Soluble lytic murein transglycosylase		Down Regulated
sppA	946281	Protease 4		Down Regulated
yjaG	948501	Uncharacterized protein yjaG	[]	Down Regulated
nfi	948502	Endonuclease V		Ambiguous/Unsorted
zraS	948506	Sensor protein; Sensor protein zraS		Down Regulated
torT	946289	Periplasmic protein torT		Up Regulated
nlpE	946782	Lipoprotein nlpE		Up Regulated
xylA	948141	Xylose isomerase		Up Regulated
folX	946781	D-erythro-7,8-dihydroneopterin triphosphate epimerase		Up Regulated
rsuA	945378	Pseudouridine synthase; Ribosomal small subunit pseudouridine synthase A		Down Regulated
yahG	945379	Uncharacterized protein yahG	['Amino acid transport and metabolism', ' Central intermediary metabolism', ' Metabolism of other compounds', 'metabolic process']	Ambiguous/Unsorted
bioA	945376	Adenosylmethionine-8-amino-7-oxononanoate aminotransferase		Down Regulated
ybhH	945375	Uncharacterized protein ybhH	[]	Temporarly Down Regula
rfaG	948149	Lipopolysaccharide core biosynthesis protein rfaG		Temporarly Up Regulated
ybhA	945372	Phosphatase ybhA		Temporarly Up Regulated
DeoB	948910	Phosphopentomutase		Ambiguous/Unsorted
hisP	946789	Histidine transport ATP-binding protein hisP		Ambiguous/Unsorted
radA	948912	DNA repair protein radA		Down Regulated
bioB	945370	Biotin synthase		Down Regulated
mngR	945371	Mannosyl-D-glycerate transport/metabolism system repressor mngR		Up Regulated
yjiY	948914	Inner membrane protein yjiY		Temporarly Up Regulated
yfcH	946784	Epimerase family protein yfcH		Up Regulated
serB	948913	Phosphoserine phosphatase		Down Regulated
fdrA	946298	Protein fdrA		Ambiguous/Unsorted
metA	948513	Homoserine O-succinyltransferase		Ambiguous/Unsorted
aceB	948512	Malate synthase A; Malate synthase		Up Regulated
rfaP	948150	Lipopolysaccharide core biosynthesis protein rfaP		Down Regulated
aceA	948517	Isocitrate lyase		Up Regulated
pagB	948518	Uncharacterized protein yjbD		Down Regulated
yjbD	948518	Uncharacterized protein yjbD		Down Regulated
ndh	946792	NADH dehydrogenase		Ambiguous/Unsorted
yicC	948154	UPF0701 protein yicC		Up Regulated
purF	946794	Amidophosphoribosyltransferase		Temporarly Up Regulated
truA	946793	tRNA pseudouridine synthase A		Down Regulated
yjaH	948508	Uncharacterized protein yjaH	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Temporarly Up Regulated
pyrE	948157	Orotate phosphoribosyltransferase		Ambiguous/Unsorted
bioD	945387	Putative dethiobiotin synthetase; Dethiobiotin synthetase		Temporarly Down Regula
slmA	948158	HTH-type protein slmA		Down Regulated
rfaQ	948155	Lipopolysaccharide core biosynthesis glycosyltransferase rfaQ		Down Regulated
rph	948156	Ribonuclease PH		Ambiguous/Unsorted
ybhB	945383	UPF0098 protein ybhB		Up Regulated
bioF	945384	8-amino-7-oxononanoate synthase		Down Regulated
uvrB	945385	UvrABC system protein B		Ambiguous/Unsorted

spoT	948159	Guanosine-3',5'-bis(diphosphate) 3'-pyrophosphohydrolase		Down Regulated
yeaJ	946290	Uncharacterized protein yeaJ	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription', 'r	Ambiguous/Unsorted
uxuB	946795	D-mannonate oxidoreductase		Temporarly Up Regulated
deoC	948902	Deoxyribose-phosphate aldolase		Up Regulated
deoA	948901	Thymidine phosphorylase		Ambiguous/Unsorted
tolQ	948900	Protein tolQ		Down Regulated
yfcG	946763	Uncharacterized GST-like protein yfcG		Ambiguous/Unsorted
nuoA	946764	NADH-quinone oxidoreductase subunit; NADH-quinone oxidoreductase subunit A		Temporarly Down Regula
mutM	946765	Formamidopyrimidine-DNA glycosylase		Ambiguous/Unsorted
yfbU	946767	UPF0304 protein yfbU		Temporarly Down Regula
selD	946768	Selenide, water dikinase		Ambiguous/Unsorted
lrhA	946769	Probable HTH-type transcriptional regulator lrhA		Down Regulated
yicI	948169	Alpha-xylosidase		Ambiguous/Unsorted
yicJ	948168	Inner membrane symporter yicJ		Temporarly Down Regula
gltS	948166	Sodium/glutamate symport carrier protein		Temporarly Down Regula
ligB	948164	DNA ligase B		Ambiguous/Unsorted
rbn	946760	Ribonuclease Z		Down Regulated
gmk	948163	Guanylate kinase		Ambiguous/Unsorted
recG	948162	ATP-dependent DNA helicase recG		Down Regulated
nuoH	946761	NADH-quinone oxidoreductase subunit H		Down Regulated
trmH	948161	tRNA guanosine-2'-O-methyltransferase		Down Regulated
flk	946776	Flagellar regulator flk		Down Regulated
yfbT	946777	Phosphatase yfbT		Up Regulated
setC	948177	Sugar efflux transporter C		Ambiguous/Unsorted
yfbR	946771	UPF0207 protein yfbR; 5'-nucleotidase yfbR		Ambiguous/Unsorted
yfbQ	946772	Uncharacterized aminotransferase yfbQ	[]	Down Regulated
yicN	948173	Uncharacterized protein yicN	[' Carbon compound utilization', 'regulation of transcription']	Down Regulated
nlpA	948175	Lipoprotein 28		Down Regulated
yicH	948171	Uncharacterized protein yicH	['Energy production and conversion']	Ambiguous/Unsorted
kdpD	946744	Sensor protein; Sensor protein kdpD		Up Regulated
nuoE	946746	NADH-quinone oxidoreductase subunit E		Ambiguous/Unsorted
yidJ	948188	Uncharacterized sulfatase yidJ	[]	Down Regulated
ilvN	948183	Acetolactate synthase isozyme 1 small subunit		Ambiguous/Unsorted
nuoB	946738	NADH-quinone oxidoreductase subunit B		Down Regulated
nuoI	946757	NADH-quinone oxidoreductase subunit I		Temporarly Down Regula
elaB	946751	Protein elaB		Up Regulated
elaA	946750	Protein elaA		Temporarly Up Regulated
uhpB	948195	Sensor protein uhpB		Ambiguous/Unsorted
yidR	948198	Uncharacterized protein yidR	['Energy production and conversion', 'electron transport']	Temporarly Down Regula
yidQ	948199	Uncharacterized protein yidQ	[]	Up Regulated
yidG	948191	Inner membrane protein yidG		Down Regulated
ibpB	948192	Small heat shock protein ibpB		Ambiguous/Unsorted
yfcF	946749	Uncharacterized GST-like protein yfcF		Up Regulated
srlB	948971	Glucitol/sorbitol-specific phosphotransferase enzyme IIA component		Up Regulated
ybgJ	945311	Uncharacterized protein ybgJ	[]	Ambiguous/Unsorted
sdhC	945316	Succinate dehydrogenase cytochrome b556 subunit		Ambiguous/Unsorted
atoE	946721	Short-chain fatty acids transporter		Temporarly Up Regulated
yjgR	948978	Uncharacterized protein yjgR	[]	Up Regulated
menD	946720	2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase		Temporarly Down Regula
rffD	948977	UDP-N-acetyl-D-mannosamine dehydrogenase		Ambiguous/Unsorted
ypdA	946723	Inner membrane protein ypdA		Temporarly Down Regula
glpQ	946725	Glycerophosphoryl diester phosphodiesterase		Temporarly Up Regulated
acnA	946724	Aconitate hydratase 1		Up Regulated
hisJ	945309	Histidine-binding periplasmic protein		Ambiguous/Unsorted
gltA	945323	Citrate synthase		Ambiguous/Unsorted
lptG	945324	Lipopolysaccharide export system permease protein lptG		Up Regulated
tolR	945328	Protein tolR		Ambiguous/Unsorted
ybgE	945326	Uncharacterized protein ybgE	['Energy production and conversion', ' Energy metabolism carbon ', ' Energy production transport', 'electron transport']	Up Regulated
ttcA	948967	tRNA 2-thiocytidine biosynthesis protein ttcA		Down Regulated
rmuC	948966	DNA recombination protein rmuC		Up Regulated
yeaP	948969	Probable diguanylate cyclase yeaP		Down Regulated
ygiQ	948963	UPF0313 protein ygiQ		Down Regulated
nei	945320	Endonuclease VIII; Endonuclease 8		Down Regulated
glpC	946735	Anaerobic glycerol-3-phosphate dehydrogenase subunit C		Down Regulated
menC	946734	o-succinylbenzoate synthase		Temporarly Down Regula

atoB	946727	Acetyl-CoA acetyltransferase		Temporarly Down Regula
yejG	945319	Uncharacterized protein yejG	[]	Down Regulated
ybgL	945318	UPF0271 protein ybgL		Ambiguous/Unsorted
rcsC	948993	Sensor kinase protein rcsC; Sensor protein		Down Regulated
djlA	948992	DnaJ-like protein djlA		Temporarly Down Regula
yeiR	946701	Uncharacterized protein yeiR	[]	Down Regulated
eco	946700	Ecotin		Up Regulated
cho	948996	Excinuclease cho		Temporarly Up Regulated
mqo	946702	Malate:quinone oxidoreductase; Probable malate:quinone oxidoreductase		Temporarly Up Regulated
csgE	945711	Curli production assembly/transport component csgE		Down Regulated
osmE	945305	Osmotically-inducible lipoprotein E		Up Regulated
rhsC	945306	Protein rhsC		Ambiguous/Unsorted
yccX	945304	Acylphosphatase		Up Regulated
borD	948980	Lipoprotein bor homolog from lambdoid prophage DLP12		Ambiguous/Unsorted
SdhB	945300	Succinate dehydrogenase iron-sulfur subunit		Ambiguous/Unsorted
hybD	948982	Hydrogenase 2 maturation protease		Temporarly Down Regula
ccmA	946714	Cytochrome c biogenesis ATP-binding export protein ccmA		Temporarly Down Regula
glpA	946713	Anaerobic glycerol-3-phosphate dehydrogenase subunit A		Up Regulated
menF	946712	Menaquinone-specific isochorismate synthase		Ambiguous/Unsorted
apbE	946711	Thiamine biosynthesis lipoprotein apbE		Up Regulated
guaC	948986	GMP reductase		Ambiguous/Unsorted
lolA	948989	Outer-membrane lipoprotein carrier protein		Up Regulated
betA	945716	Choline dehydrogenase		Down Regulated
yojI	946705	ABC transporter ATP-binding protein yojI		Temporarly Up Regulated
arcB	947887	Aerobic respiration control sensor protein arcB; Sensor protein		Down Regulated
frlR	947885	HTH-type transcriptional regulator frlR		Ambiguous/Unsorted
DHAI	945743	PTS-dependent dihydroxyacetone kinase operon regulatory protein		Up Regulated
map	947882	Methionine aminopeptidase		Ambiguous/Unsorted
minC	945744	Septum site-determining protein minC; Probable septum site-determining protein minC		Down Regulated
cysG	947880	Siroheme synthase		Down Regulated
minE	945740	Cell division topological specificity factor		Down Regulated
PabA	947873	Para-aminobenzoate synthase glutamine amidotransferase component II		Down Regulated
rpsB	947874	30S ribosomal protein S2		Ambiguous/Unsorted
frlB	947875	Fructoselysine 6-phosphate deglycase		Temporarly Up Regulated
ycgE	945735	Uncharacterized HTH-type transcriptional regulator ycgE	[]	Down Regulated
yhfG	947871	Uncharacterized protein yhfG	['Amino acid transport and metabolism', 'protein folding', 'amino acid biosynthetic process']	Up Regulated
fic	947872	Cell filamentation protein fic		Up Regulated
rssA	945725	NTE family protein rssA		Ambiguous/Unsorted
ribA	945763	GTP cyclohydrolase-2		Down Regulated
clpA	945764	ATP-dependent Clp protease ATP-binding subunit clpA		Up Regulated
pth	945765	Peptidyl-tRNA hydrolase		Temporarly Down Regula
ycgV	945767	Uncharacterized protein ycgV	['Amino acid transport and metabolism', ' Building block biosynthesis']	Temporarly Up Regulated
gst	945758	Glutathione S-transferase		Ambiguous/Unsorted
gph	947895	Phosphoglycolate phosphatase		Ambiguous/Unsorted
rpe	947896	Ribulose-phosphate 3-epimerase		Ambiguous/Unsorted
dadA	945752	D-amino acid dehydrogenase small subunit		Down Regulated
sufB	945753	Protein sufB		Up Regulated
yhfW	947890	Uncharacterized protein yhfW	['Replication recombination and repair', ' Carbon compound utilization']	Ambiguous/Unsorted
btuD	945751	Vitamin B12 import ATP-binding protein btuD		Temporarly Down Regula
ldcA	945756	Muramoyltetrapeptide carboxypeptidase		Temporarly Down Regula
treA	945757	Periplasmic trehalase; Putative periplasmic trehalase		Up Regulated
dam	947893	DNA adenine methylase		Down Regulated
dadX	945754	Alanine racemase, catabolic; Alanine racemase		Up Regulated
cvrA	945755	Cell volume regulation protein A		Down Regulated
dhaM	945749	PTS-dependent dihydroxyacetone kinase, phosphotransferase subunit dhaM		Up Regulated
dhaL	945748	PTS-dependent dihydroxyacetone kinase, ADP-binding subunit dhaL		Up Regulated
dhaK	945747	PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit dhaK		Ambiguous/Unsorted
narX	945788	Nitrate/nitrite sensor protein narX		Down Regulated
clpB	947077	Chaperone protein clpB		Ambiguous/Unsorted
ychA	945784	Protein sirB1		Temporarly Down Regula
ydhS	945786	Uncharacterized protein ydhS	[' Building block biosynthesis']	Up Regulated
yeaC	947074	Uncharacterized protein yeaC	[]	Temporarly Up Regulated
narG	945782	Respiratory nitrate reductase 1 alpha chain		Temporarly Down Regula
nudK	947072	GDP-mannose pyrophosphatase nudK		Ambiguous/Unsorted
prmC	945779	Protein methyltransferase hemK		Temporarly Up Regulated

nfsB	945778	Oxygen-insensitive NAD(P)H nitroreductase		Ambiguous/Unsorted
yfiH	947089	UPF0124 protein yfiH		Temporarly Up Regulated
hemA	945777	Glutamyl-tRNA reductase		Down Regulated
yqaB	945776	Phosphatase yqaB		Up Regulated
lolB	945775	Outer-membrane lipoprotein lolB		Ambiguous/Unsorted
aroF	947084	Phospho-2-dehydro-3-deoxyheptonate aldolase, Tyr-sensitive		Down Regulated
ispE	945774	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase		Temporarly Up Regulated
agp	945773	Glucose-1-phosphatase		Up Regulated
rluD	947087	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase D		Ambiguous/Unsorted
cysB	945771	HTH-type transcriptional regulator cysB		Ambiguous/Unsorted
ybaK	947083	Uncharacterized protein ybaK		Up Regulated
uxuA	947082	Mannonate dehydratase		Up Regulated
ychF	945769	GTP-dependent nucleic acid-binding protein engD		Down Regulated
yegP	947095	UPF0339 protein yegP		Up Regulated
rplS	947096	50S ribosomal protein L19		Ambiguous/Unsorted
trmD	947099	tRNA (guanine-N(1)-)-methyltransferase		Ambiguous/Unsorted
yfiB	947094	Putative lipoprotein yfiB		Down Regulated
narL	945795	Nitrate/nitrite response regulator protein narL		Temporarly Up Regulated
ychN	945794	Protein ychN		Ambiguous/Unsorted
rplE	947800	50S ribosomal protein L5		Ambiguous/Unsorted
rpsN	947801	30S ribosomal protein S14		Down Regulated
rpsH	947802	30S ribosomal protein S8		Down Regulated
ptrB	946358	Protease 2		Ambiguous/Unsorted
acpS	947037	Holo-[acyl-carrier-protein] synthase		Temporarly Up Regulated
yoaB	946357	UPF0076 protein yoaB		Up Regulated
yebE	946355	Inner membrane protein yebE		Ambiguous/Unsorted
pdxJ	947039	Pyridoxine 5'-phosphate synthase		Ambiguous/Unsorted
queC	947034	Queuosine biosynthesis protein queC		Down Regulated
thiC	948492	Thiamine biosynthesis protein thiC		Temporarly Down Regula
rnc	947033	Ribonuclease 3		Ambiguous/Unsorted
yebT	946352	Uncharacterized protein yebT	['Inorganic ion transport and metabolism']	Down Regulated
era	947036	GTP-binding protein era; GTP-binding protein era homolog		Down Regulated
yebO	946350	Uncharacterized protein yebO	[]	Up Regulated
yfhH	947030	Uncharacterized HTH-type transcriptional regulator yfhH	['Carbohydrate transport and metabolism']	Ambiguous/Unsorted
rsd	948496	Regulator of sigma D		Temporarly Down Regula
hupA	948499	DNA-binding protein HU-alpha		Ambiguous/Unsorted
nudC	948498	NADH pyrophosphatase		Down Regulated
zapA	947404	Cell division protein zapA		Ambiguous/Unsorted
rpmI	946349	50S ribosomal protein L35		Down Regulated
rsmF	946348	Ribosomal RNA small subunit methyltransferase F		Down Regulated
exbD	946345	Biopolymer transport protein exbD		Down Regulated
dsbB	946344	Disulfide bond formation protein B		Temporarly Down Regula
nadB	947049	L-aspartate oxidase		Temporarly Up Regulated
yebV	946347	Uncharacterized protein yebV	['Replication recombination and repair']	Up Regulated
yfiC	947047	ECED1_3006; c3099; E2348C_2852; ECIAI1_2689; APECO1_3956; ECS88_2749; ECDH10B_2743; ECUMN_2898; ECIAI39_2780; UTI89_C2897; EC55989_2864; pC15-1a_066; Z3857; b2575		Temporarly Down Regula
rplA	948483	50S ribosomal protein L1		Up Regulated
rlmA	946340	b1822		Ambiguous/Unsorted
yaeH	947044	UPF0325 protein yaeH		Up Regulated
manZ	946342	Mannose permease IID component		Ambiguous/Unsorted
bolA	947043	Protein bolA		Up Regulated
glrR	947042	Uncharacterized protein yfhA		Down Regulated
qseF	947042	Uncharacterized protein yfhA		Down Regulated
lepB	947040	Signal peptidase I		Ambiguous/Unsorted
epd	947413	D-erythrose-4-phosphate dehydrogenase		Down Regulated
mscS	947416	Small-conductance mechanosensitive channel		Ambiguous/Unsorted
rpoE	947050	RNA polymerase sigma factor; RNA polymerase sigma-E factor		Temporarly Up Regulated
yhcB	947815	Putative cytochrome d ubiquinol oxidase subunit 3		Down Regulated
rplC	947817	50S ribosomal protein L3		Temporarly Down Regula
rplW	947819	50S ribosomal protein L23		Up Regulated
yebC	946379	UPF0082 protein yebC		Ambiguous/Unsorted
pssA	947059	CDP-diacylglycerol--serine O-phosphatidyltransferase		Down Regulated
rplB	947820	50S ribosomal protein L2		Down Regulated
yhcM	947821	Uncharacterized protein yhcM	[]	Ambiguous/Unsorted
rseC	947052	Sigma-E factor regulatory protein rseC		Down Regulated
etk	947409	Tyrosine-protein kinase etk		Temporarly Up Regulated

ruvB	946371	Holliday junction ATP-dependent DNA helicase ruvB		Down Regulated
rseB	947054	Sigma-E factor regulatory protein rseB		Down Regulated
rseA	947053	Sigma-E factor negative regulatory protein		Down Regulated
yfiQ	947056	Uncharacterized protein yfiQ	[]	Up Regulated
znuA	946375	High-affinity zinc uptake system protein znuA		Up Regulated
yciH	947058	Uncharacterized protein yciH	['Translation ribosomal structure and biogenesis', 'translation']	Temporarly Up Regulated
znuC	946374	Zinc import ATP-binding protein znuC		Up Regulated
yfiP	947057	DTW domain-containing protein yfiP		Down Regulated
yebK	946373	HTH-type transcriptional regulator hexR		Up Regulated
ycfQ	947425	Uncharacterized HTH-type transcriptional regulator ycfQ	[]	Up Regulated
nagE	945292	PTS system N-acetylglucosamine-specific EIICBA component		Up Regulated
yggU	947424	UPF0235 protein yggU		Temporarly Down Regula
ybfE	945291	Uncharacterized protein ybfE		Up Regulated
rdgB	947429	Nucleoside-triphosphatase; Nucleoside-triphosphatase rdgB		Ambiguous/Unsorted
yfiM	947060	Uncharacterized protein yfiM	[' RNA related']	Temporarly Up Regulated
hycI	947428	Hydrogenase 3 maturation protease		Up Regulated
entE	947426	Enterobactin synthetase component E		Up Regulated
rpmC	947807	50S ribosomal protein L29		Ambiguous/Unsorted
rplP	947806	50S ribosomal protein L16		Down Regulated
rplR	947804	50S ribosomal protein L18		Temporarly Up Regulated
yggT	947421	Uncharacterized protein yggT	[]	Down Regulated
rplN	947809	50S ribosomal protein L14		Ambiguous/Unsorted
rpsQ	947808	30S ribosomal protein S17		Temporarly Up Regulated
rplX	947810	50S ribosomal protein L24		Down Regulated
ruvA	946369	Holliday junction ATP-dependent DNA helicase ruvA		Ambiguous/Unsorted
rplV	947813	50S ribosomal protein L22		Up Regulated
rpsS	947811	30S ribosomal protein S19		Down Regulated
selU	947063	tRNA 2-selenouridine synthase		Down Regulated
exoX	946361	Exodeoxyribonuclease 10		Down Regulated
trxC	947062	Thioredoxin-2		Up Regulated
kgtP	947069	Alpha-ketoglutarate permease		Temporarly Down Regula
yebF	946363	Protein yebF		Up Regulated
edd	946362	Phosphogluconate dehydratase		Temporarly Down Regula
yfiD	947068	Autonomous glycyl radical cofactor		Down Regulated
ung	947067	Uracil-DNA glycosylase		Down Regulated
ycgB	946365	Uncharacterized protein ycgB	['metabolic process']	Up Regulated
yebG	946364	Uncharacterized protein yebG	['Translation ribosomal structure and biogenesis', 'Replication recombination and repair']	Down Regulated
nagB	945290	Glucosamine-6-phosphate deaminase		Up Regulated
yggR	947430	Uncharacterized protein yggR	[]	Temporarly Up Regulated
speA	947432	Biosynthetic arginine decarboxylase; Arginine decarboxylase		Down Regulated
CHIA	947837	Probable bifunctional chitinase/lysozyme		Up Regulated
bfr	947839	Bacterioferritin		Up Regulated
yoaC	946308	Uncharacterized protein yoaC	['Replication recombination and repair', 'DNA recombination']	Down Regulated
nrdR	947437	Transcriptional repressor nrdR		Down Regulated
yqgF	947439	Putative Holliday junction resolvase		Ambiguous/Unsorted
yoaF	946310	Uncharacterized protein yoaF	[]	Temporarly Down Regula
pflC	948453	Pyruvate formate-lyase 2-activating enzyme		Down Regulated
pflD	948454	Formate acetyltransferase 2		Ambiguous/Unsorted
argC	948455	N-acetyl-gamma-glutamyl-phosphate reductase		Ambiguous/Unsorted
argE	948456	Acetylornithine deacetylase		Ambiguous/Unsorted
rpsL	947845	30S ribosomal protein S12		Down Regulated
rpmG	946318	50S ribosomal protein L33		Down Regulated
yheL	947844	Protein tusB		Up Regulated
yijP	948458	E2348C_4267; ECUMN_4486; ECED1_4660; b3955; ECDH10B_4143; ECIAI1_4163; EC55989_4437; Z5513; ECS88_4410; UTI89_C4546; c4914; ECIAI39_3034		Temporarly Down Regula
rpsG	947846	30S ribosomal protein S7		Down Regulated
ompN	946313	Outer membrane protein N		Up Regulated
yeaY	946312	Uncharacterized lipoprotein yeaY	['Cell wall membrane envelope biogenesis', 'metabolic process']	Up Regulated
sad	947440	Aldehyde dehydrogenase-like protein yneI		Ambiguous/Unsorted
rplM	947828	50S ribosomal protein L13		Up Regulated
trmI	947448	tRNA (guanine-N(7)-)-methyltransferase		Temporarly Down Regula
yggL	947449	Uncharacterized protein yggL	[]	Temporarly Down Regula
yggW	947446	Oxygen-independent coproporphyrinogen-III oxidase-like protein yggW		Temporarly Down Regula
mutY	947447	A/G-specific adenine glycosylase		Temporarly Up Regulated
atoC	947444	Acetoacetate metabolism regulatory protein atoC		Temporarly Up Regulated
iscU	947002	NifU-like protein		Down Regulated

puuC	947003	Gamma-glutamyl-gamma-aminobutyraldehyde dehydrogenase		Temporarly Down Regula
gldA	948440	Glycerol dehydrogenase		Up Regulated
yccS	947001	Inner membrane protein yccS		Ambiguous/Unsorted
clpS	948443	ATP-dependent Clp protease adapter protein clpS		Down Regulated
hrpA	948444	ATP-dependent RNA helicase hrpA		Down Regulated
yeaZ	946304	M22 peptidase homolog yeaZ		Ambiguous/Unsorted
thiB	946306	Thiamine-binding periplasmic protein		Up Regulated
flgA	946300	Flagella basal body P-ring formation protein flgA		Down Regulated
talA	947006	Transaldolase A; Transaldolase		Ambiguous/Unsorted
mipA	946301	MltA-interacting protein		Up Regulated
gspK	947831	Probable general secretion pathway protein K		Ambiguous/Unsorted
yhcO	947830	Uncharacterized protein yhcO	[]	Down Regulated
yeaE	946302	Uncharacterized protein yeaE		Up Regulated
iscS	947004	Cysteine desulfurase		Ambiguous/Unsorted
yeaK	946303	Uncharacterized protein yeaK	[]	Down Regulated
phr	947005	Deoxyribodipyrimidine photo-lyase		Ambiguous/Unsorted
slyD	947859	FKBP-type peptidyl-prolyl cis-trans isomerase slyD		Ambiguous/Unsorted
kdpB	947450	Potassium-transporting ATPase B chain		Ambiguous/Unsorted
yggN	947453	Uncharacterized protein yggN	[' Central intermediary metabolism']	Temporarly Up Regulated
ansB	947454	L-asparaginase 2		Up Regulated
flgJ	947456	Peptidoglycan hydrolase flgJ		Down Regulated
speC	947457	Ornithine decarboxylase, constitutive		Ambiguous/Unsorted
yahA	947459	Cyclic di-GMP phosphodiesterase yahA		Temporarly Up Regulated
yfhG	947010	Uncharacterized protein yfhG	['Amino acid transport and metabolism', ' Building block biosynthesis', ' RNA related', ' Type of regulation', 'transcription', 'regulation o	Temporarly Down Regula
ycdX	948477	Putative hydrolase ycdX		Down Regulated
sdaA	946331	L-serine dehydratase 1		Up Regulated
nlpD	947011	Lipoprotein nlpD		Up Regulated
murB	948470	UDP-N-acetylenolpyruvoylglucosamine reductase		Ambiguous/Unsorted
manY	946332	Mannose permease IIC component		Down Regulated
yacC	948472	Uncharacterized protein yacC	['Amino acid transport and metabolism']	Down Regulated
argR	947861	Arginine repressor		Down Regulated
qseE	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Temporarly Up Regulated
glrK	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Temporarly Up Regulated
yhfA	947860	Protein yhfA		Ambiguous/Unsorted
yebY	947014	Uncharacterized protein yebY	['translation']	Ambiguous/Unsorted
yoaE	946335	UPF0053 inner membrane protein yoaE		Up Regulated
prkB	947862	Probable phosphoribulokinase; Phosphoribulokinase		Up Regulated
pepT	946333	Peptidase T		Up Regulated
degS	947865	Protease degS		Up Regulated
manX	946334	PTS system mannose-specific EIIAB component		Ambiguous/Unsorted
hmp	947018	Flavohemoprotein		Down Regulated
cspC	946339	Cold shock-like protein cspC		Down Regulated
yphC	947019	Uncharacterized zinc-type alcohol dehydrogenase-like protein y	[' Carbon compound utilization', ' Energy metabolism carbon ']	Ambiguous/Unsorted
crp	947867	Catabolite gene activator		Down Regulated
yhfK	947866	Uncharacterized protein yhfK	['Signal transduction mechanisms', 'tricarboxylic acid cycle']	Temporarly Down Regula
pabB	946337	Para-aminobenzoate synthase component 1		Ambiguous/Unsorted
ascB	947460	6-phospho-beta-glucosidase ascB		Ambiguous/Unsorted
yggX	947461	Probable Fe(2+)-trafficking protein		Up Regulated
yeaU	946319	Probable tartrate dehydrogenase/decarboxylase		Up Regulated
dmlA	946319	Probable tartrate dehydrogenase/decarboxylase		Up Regulated
yhdH	947848	Putative quinone oxidoreductase yhdH		Ambiguous/Unsorted
slyX	947849	Protein slyX		Up Regulated
leuA	947465	2-isopropylmalate synthase		Ambiguous/Unsorted
yphG	947021	Uncharacterized protein yphG	[' Carbon compound utilization', 'carbohydrate transport']	Up Regulated
cspE	947024	Cold shock-like protein cspE		Down Regulated
oxyR	948462	Hydrogen peroxide-inducible genes activator		Ambiguous/Unsorted
fabR	948460	HTH-type transcriptional repressor fabR		Ambiguous/Unsorted
murG	946321	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase		Ambiguous/Unsorted
yphH	947023	Uncharacterized protein yphH	['Carbohydrate transport and metabolism', 'Transcription', 'carbohydrate metabolic process']	Ambiguous/Unsorted
potA	946323	Spermidine/putrescine import ATP-binding protein potA		Down Regulated
yheM	947853	Protein tusC		Temporarly Down Regula
yfgC	947029	TPR repeat-containing protein yfgC		Ambiguous/Unsorted
ddlB	946324	D-alanine--D-alanine ligase B		Down Regulated
yfhB	947026	Uncharacterized protein yfhB	['Nucleotide transport and metabolism']	Down Regulated
tadA	947027	tRNA-specific adenosine deaminase		Down Regulated

yheO	947851	Uncharacterized protein yheO	['protein folding']	Down Regulated
phoQ	946326	Sensor protein phoQ; Sensor protein		Down Regulated
birA	948469	Bifunctional protein birA		Temporarly Up Regulate
kefB	947858	Glutathione-regulated potassium-efflux system protein kefB		Temporarly Down Regula
kefG	947857	Glutathione-regulated potassium-efflux system ancillary protein kefG		Up Regulated
Fadd	946327	Long-chain-fatty-acid--CoA ligase		Up Regulated
rnd	946328	Ribonuclease D		Down Regulated
murI	948467	Glutamate racemase		Down Regulated
yheS	947856	Uncharacterized ABC transporter ATP-binding protein yheS	[]	Ambiguous/Unsorted
yheT	947855	Putative esterase yheT		Temporarly Up Regulate

Common Nam	Entrez ID	Gene Name	Prediction	Sorted Category
yjeK	948662	Uncharacterized kamA family protein yjeK	['metabolic process']	Down Regulated
dxr	945019	1-deoxy-D-xylulose 5-phosphate reductoisomerase		Temporarly Down Regulated
groL	948665	60 kDa chaperonin		Down Regulated
ribF	949129	Riboflavin biosynthesis protein ribF		Down Regulated
kch	945841	Putative potassium channel protein		Down Regulated
ydhB	945208	Uncharacterized HTH-type transcriptional regulator ydhB	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
fepG	945209	Ferric enterobactin transport system permease protein fepG		Ambiguous/Unsorted
ybaA	948863	Uncharacterized protein ybaA	[]	Up Regulated
ydcI	948865	Uncharacterized HTH-type transcriptional regulator ydcI	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depen	Up Regulated
btuR	945839	Cob(I)yrinic acid a,c-diamide adenosyltransferase		Down Regulated
hsdS	948867	Type-1 restriction enzyme EcoKI specificity protein		Temporarly Down Regulated
yciK	945838	Uncharacterized oxidoreductase yciK	['DNA repair', 'response to DNA damage stimulus']	Ambiguous/Unsorted
creD	948868	Inner membrane protein creD		Ambiguous/Unsorted
cstA	945213	Carbon starvation protein A		Ambiguous/Unsorted
rbsK	948260	Ribokinase		Down Regulated
ychE	945836	UPF0056 membrane protein yhcE		Temporarly Down Regulated
yjiN	948860	Uncharacterized protein yjiN	['response to antibiotic']	Up Regulated
sugE	948671	Quaternary ammonium compound-resistance protein sugE		Down Regulated
tauD	945021	Alpha-ketoglutarate-dependent taurine dioxygenase		Down Regulated
dinI	945022	DNA-damage-inducible protein I		Temporarly Up Regulated
rcsF	949113	Protein rcsF		Down Regulated
yaeB	949112	UPF0066 protein yaeB		Ambiguous/Unsorted
psd	948673	Phosphatidylserine decarboxylase proenzyme		Ambiguous/Unsorted
poxA	948672	Putative lysyl-tRNA synthetase		Up Regulated
abgR	945831	HTH-type transcriptional regulator abgR		Ambiguous/Unsorted
yqeG	945028	Inner membrane transport protein yqeG		Ambiguous/Unsorted
yhbV	949117	Uncharacterized protein yhbV	['Coenzyme transport and metabolism', ' Energy metabolism carbon ', ' Building block biosynthesis', 'ion transport', 'iron ion transp	Up Regulated
yjeM	948679	Inner membrane transporter yjeM		Up Regulated
yieL	948272	Uncharacterized protein yieL	['Carbohydrate transport and metabolism']	Up Regulated
yjeP	948676	Uncharacterized mscS family protein yjeP	['purine nucleotide biosynthetic process', 'biosynthetic process']	Down Regulated
ilvE	948278	Branched-chain-amino-acid aminotransferase		Down Regulated
ilvM	948279	Acetolactate synthase isozyme 2 small subunit		Down Regulated
tauC	945026	Taurine transport system permease protein tauC		Down Regulated
tauB	945027	Taurine import ATP-binding protein tauB		Down Regulated
ilvD	948277	Dihydroxy-acid dehydratase		Down Regulated
oppA	945830	Periplasmic oligopeptide-binding protein		Down Regulated
thrB	947498	Homoserine kinase		Down Regulated
ylaC	948876	Inner membrane protein ylaC		Up Regulated
ampD	948877	1,6-anhydro-N-acetylmuramyl-L-alanine amidase ampD		Ambiguous/Unsorted
leuS	947497	Leucyl-tRNA synthetase		Temporarly Down Regulated
dkgA	947495	2,5-diketo-D-gluconic acid reductase A		Temporarly Up Regulated
tatE	945228	Sec-independent protein translocase protein tatE		Down Regulated
marR	945825	Multiple antibiotic resistance protein marR		Up Regulated
ybgI	945824	UPF0135 protein ybgI		Ambiguous/Unsorted
dacA	945222	D-alanyl-D-alanine carboxypeptidase dacA		Down Regulated
ahpC	945225	Alkyl hydroperoxide reductase subunit C		Temporarly Up Regulated
yqhC	947491	Uncharacterized HTH-type transcriptional regulator yqhC	[' RNA related', ' Type of regulation', ' Genetic unit regulated', ' Protection', 'regulation of transcription DNA dependent']	Up Regulated
dsbG	945224	Thiol:disulfide interchange protein dsbG		Down Regulated
yjjL	948879	Inner membrane transport protein yjjL		Up Regulated
ybeD	945220	UPF0250 protein ybeD		Ambiguous/Unsorted
hsdM	948872	Type I restriction enzyme EcoKI M protein		Down Regulated
fecR	949104	Protein fecR		Ambiguous/Unsorted
tauA	945030	Taurine-binding periplasmic protein		Down Regulated
dsdX	949103	DsdX permease		Up Regulated
fumB	948642	Fumarate hydratase class I, anaerobic		Up Regulated
yaiI	945033	UPF0178 protein yaiI		Down Regulated
atpF	948247	ATP synthase subunit b; ATP synthase B chain		Down Regulated
mnmG	948248	tRNA uridine 5-carboxymethylaminomethyl modification enzyme mnmG		Ambiguous/Unsorted
atpG	948243	ATP synthase gamma chain		Down Regulated
atpD	948244	ATP synthase subunit beta		Down Regulated
ptrA	947284	Protease 3		Temporarly Down Regulated
atpC	948245	ATP synthase epsilon chain		Down Regulated
glmU	948246	Bifunctional protein glmU		Down Regulated
recB	947286	Exodeoxyribonuclease V beta chain		Down Regulated
ynfH	945822	Anaerobic dimethyl sulfoxide reductase chain ynfH		Down Regulated
RecD	947287	Exodeoxyribonuclease V alpha chain		Down Regulated
oppB	945823	Oligopeptide transport system permease protein oppB		Down Regulated
fimA	948838	Type-1 fimbrial protein, A chain		Up Regulated
nanM	949106	N-acetylneuraminate epimerase		Up Regulated
glmS	948241	Glucosamine--fructose-6-phosphate aminotransferase [isomerizing]		Down Regulated
argA	947289	Amino-acid acetyltransferase		Down Regulated
atpA	948242	ATP synthase subunit alpha		Down Regulated
Dos	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarly Up Regulated

dosP	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarly Up Regulated
gpr	947480	Uncharacterized protein yghZ		Temporarly Up Regulated
yghZ	947480	Uncharacterized protein yghZ		Temporarly Up Regulated
fimH	948847	Protein fimH		Temporarly Down Regulated
ygiT	945814	Uncharacterized HTH-type transcriptional regulator ygiT	[' Carbon compound utilization', 'metabolic process']	Up Regulated
mqsA	945814	Uncharacterized HTH-type transcriptional regulator ygiT		Up Regulated
gntP	948848	High-affinity gluconate transporter		Up Regulated
flgD	945813	Basal-body rod modification protein flgD		Down Regulated
rfbC	947482	dTDP-4-dehydrorhamnose 3,5-epimerase		Down Regulated
yfdY	948842	Uncharacterized protein yfdY	[]	Up Regulated
uidB	947484	ECIAI39_1442; EcHS_A1691; APECO1_699; b1616; ECDH10B_1749; c2008; UTI89_C1804; EcSMS35_1583; EcE24377A_1824; Z2620; ECS88_1662; ECED1_1815; ECUMN_1905; ECH		Up Regulated
yciU	945819	UPF0263 protein yciU		Down Regulated
rlmH	945239	Ribosomal RNA large subunit methyltransferase H		Temporarly Down Regulated
mrdB	945238	Rod shape-determining protein rodA		Down Regulated
flhC	947280	Flagellar transcriptional activator flhC		Temporarly Up Regulated
ybeB	945237	Uncharacterized protein ybeB	[]	Down Regulated
sgcX	948840	Putative sgc region protein sgcX		Up Regulated
fadR	948652	Fatty acid metabolism regulator protein		Down Regulated
psiF	945040	Phosphate starvation-inducible protein psiF		Up Regulated
ygdD	947279	UPF0382 inner membrane protein ygdD		Temporarly Up Regulated
yjdC	948650	HTH-type transcriptional regulator yjdC		Temporarly Up Regulated
phoR	945044	Sensor protein; Phosphate regulon sensor protein phoR		Temporarly Down Regulated
aroM	945045	Protein aroM		Temporarly Down Regulated
asnC	948259	Asparaginyl-tRNA synthetase; Regulatory protein asnC		Down Regulated
fucO	947273	Lactaldehyde reductase		Temporarly Up Regulated
csdE	947274	Uncharacterized sufE-like protein ygdK		Ambiguous/Unsorted
yaiE	945048	UPF0345 protein yaiE		Down Regulated
atpH	948254	ATP synthase subunit delta		Down Regulated
aspA	948658	Aspartate ammonia-lyase		Temporarly Up Regulated
atpB	948252	ATP synthase subunit a		Down Regulated
fxsA	948657	UPF0716 protein fxsA		Temporarly Up Regulated
yjeH	948656	Inner membrane protein yjeH		Down Regulated
atpE	948253	ATP synthase subunit c		Down Regulated
oppC	945810	Oligopeptide transport system permease protein oppC		Down Regulated
rsmG	948250	Ribosomal RNA small subunit methyltransferase G		Down Regulated
groS	948655	10 kDa chaperonin		Down Regulated
uxuR	948849	Uxu operon transcriptional regulator		Ambiguous/Unsorted
thrA	945803	Bifunctional aspartokinase/homoserine dehydrogenase 1		Temporarly Up Regulated
oppD	945802	Oligopeptide transport ATP-binding protein oppD		Down Regulated
holE	947471	DNA polymerase III subunit theta		Temporarly Down Regulated
nadD	945248	Nicotinate-nucleotide adenylyltransferase; Probable nicotinate-nucleotide adenylyltransferase		Down Regulated
gss	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarly Down Regulated
gsp	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarly Down Regulated
yjiE	948852	Uncharacterized HTH-type transcriptional regulator yjiE	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Ambiguous/Unsorted
glcG	947473	Protein glcG		Temporarly Up Regulated
yqhA	947479	UPF0114 protein yqhA		Down Regulated
rlpA	945241	Rare lipoprotein A		Down Regulated
mrdA	945240	Penicillin-binding protein 2		Down Regulated
ygdH	947266	UPF0717 protein ygdH		Down Regulated
gudX	947261	Glucarate dehydratase-related protein		Up Regulated
rumB	947260	23S rRNA (uracil-5-)-methyltransferase rumB		Temporarly Down Regulated
wrbA	947263	Flavoprotein wrbA; Putative flavoprotein wrbA		Temporarly Up Regulated
yieE	948226	Uncharacterized protein yieE	['Amino acid transport and metabolism']	Temporarly Down Regulated
yieF	948225	Uncharacterized protein yieF		Temporarly Down Regulated
ygbE	947268	Inner membrane protein ygbE		Down Regulated
gadA	948027	Glutamate decarboxylase alpha		Up Regulated
djlC	945253	Uncharacterized J domain-containing protein djlC		Up Regulated
fhuC	945250	Iron(3+)-hydroxamate import ATP-binding protein fhuC		Temporarly Up Regulated
serA	945258	D-3-phosphoglycerate dehydrogenase		Down Regulated
adiA	948638	Biodegradative arginine decarboxylase		Up Regulated
dcuS	948639	Sensor protein dcuS		Temporarly Down Regulated
phoU	948233	Phosphate transport system protein phoU		Down Regulated
melR	948637	Melibiose operon regulatory protein		Up Regulated
glcA	947259	Glycolate permease glcA		Temporarly Up Regulated
yhjA	948038	Probable cytochrome c peroxidase		Up Regulated
miaB	945260	(Dimethylallyl)adenosine tRNA methylthiotransferase miaB		Down Regulated
ubif	945261	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase		Up Regulated
yhjE	948032	Inner membrane metabolite transport protein yhjE		Temporarly Up Regulated
yhjD	948033	Inner membrane protein yhjD		Temporarly Up Regulated
eptA	948629	ECIAI1_4344; E2348C_4442; ECUMN_4646; ECS88_4616; b4114; ECED1_4848; ECIAI39_4538; EC55989_4605; ECDH10B_4306		Ambiguous/Unsorted
yhjC	948035	Uncharacterized HTH-type transcriptional regulator yhjC	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
ibpA	948200	Small heat shock protein ibpA		Up Regulated
yecJ	946388	Uncharacterized protein yecJ	[]	Down Regulated
yidX	948202	Uncharacterized protein yidX	[' Type of regulation', 'proteolysis', 'signal transduction']	Up Regulated

CYBB	947241	Cytochrome b561		Down Regulated
torZ	946389	Trimethylamine-N-oxide reductase 2		Ambiguous/Unsorted
rumA	947243	23S rRNA (uracil-5-)-methyltransferase rumA		Temporarly Down Regulated
nudB	946383	Dihydroneopterin triphosphate pyrophosphatase		Down Regulated
recF	948209	DNA replication and repair protein recF		Temporarly Down Regulated
yecR	946386	Uncharacterized protein yecR	['Inorganic ion transport and metabolism', ' Adaptation to stress', 'iron ion transport']	Down Regulated
cmoB	946387	tRNA (mo5U34)-methyltransferase		Down Regulated
pgm	945271	Phosphoglucomutase		Ambiguous/Unsorted
pitA	948009	Low-affinity inorganic phosphate transporter 1		Down Regulated
seqA	945272	Protein seqA		Temporarly Down Regulated
tsr	948884	Methyl-accepting chemotaxis protein I		Up Regulated
yhiQ	948005	UPF0341 protein yhiQ		Temporarly Up Regulated
rfbB	945276	dTDP-glucose 4,6-dehydratase		Down Regulated
erfK	945273	Protein erfK/srfK		Temporarly Up Regulated
uspA	948007	Universal stress protein A		Up Regulated
yhiI	948003	Uncharacterized protein yhiI	[' Protection']	Up Regulated
yahB	945278	Uncharacterized HTH-type transcriptional regulator yahB	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Temporarly Down Regulated
cusR	945003	Transcriptional regulatory protein cusR		Down Regulated
yaeI	945002	Phosphodiesterase yaeI		Down Regulated
opgG	945005	Glucans biosynthesis protein G		Down Regulated
gyrB	948211	DNA gyrase subunit B		Down Regulated
pal	945004	Peptidoglycan-associated lipoprotein		Down Regulated
lacI	945007	Lactose operon repressor		Up Regulated
trmJ	948610	tRNA (cytidine/uridine-2'-O-)-methyltransferase trmJ		Temporarly Down Regulated
cysI	947231	Sulfite reductase [NADPH] hemoprotein beta-component		Down Regulated
hisQ	947235	Histidine transport system permease protein hisQ		Down Regulated
dnaN	948218	DNA polymerase III subunit beta		Down Regulated
dnaA	948217	Chromosomal replication initiator protein dnaA		Down Regulated
rpmH	948216	50S ribosomal protein L34		Down Regulated
yidC	948214	Inner membrane protein oxaA		Down Regulated
osmY	948895	Osmotically-inducible protein Y		Temporarly Up Regulated
asnB	945281	Asparagine synthetase B [glutamine-hydrolyzing]		Down Regulated
fhuF	948891	Ferric iron reductase protein fhuF		Temporarly Up Regulated
flhA	946390	Flagellar biosynthesis protein flhA		Down Regulated
ybfF	945288	Esterase ybfF		Ambiguous/Unsorted
nagA	945289	N-acetylglucosamine-6-phosphate deacetylase		Ambiguous/Unsorted
yjjG	948899	5'-nucleotidase yjjG		Temporarly Down Regulated
mrr	948898	Mrr restriction system protein		Temporarly Up Regulated
prfC	948897	Peptide chain release factor 3		Down Regulated
yhjX	948066	Inner membrane protein yhjX		Up Regulated
dppC	948064	Dipeptide transport system permease protein dppC		Down Regulated
valV	946170	c5541; Z2692; UTI89_C1856; ECDH10B_1799; b1665; E2348C_tRNA31; ECs5461		Temporarly Down Regulated
eptB	948068	b3546; ECS88_3965; ECIAI39_4054; EC55989_3997; E2348C_3793; ECED1_4224; ECUMN_4058; ECDH10B_3725; ECIAI1_3705		Temporarly Down Regulated
yfeA	946864	Uncharacterized protein yfeA	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'regulation of	Temporarly Down Regulated
pykF	946179	Pyruvate kinase I; Pyruvate kinase		Temporarly Up Regulated
glk	946858	Glucokinase		Up Regulated
lpp	946175	Major outer membrane lipoprotein		Down Regulated
ydhR	946177	Putative monooxygenase ydhR		Down Regulated
ydgA	946172	Protein ydgA		Temporarly Up Regulated
ynhG	946174	Uncharacterized protein ynhG	[]	Temporarly Up Regulated
sufE	946173	Cysteine desulfuration protein sufE		Temporarly Up Regulated
gabD	948060	Succinate-semialdehyde dehydrogenase [NADP+]		Temporarly Up Regulated
yiaD	948075	Inner membrane lipoprotein yiaD		Temporarly Up Regulated
glyQ	948079	Glycyl-tRNA synthetase alpha subunit		Down Regulated
yiaA	948078	Inner membrane protein yiaA		Up Regulated
ptsI	946879	Phosphoenolpyruvate-protein phosphotransferase		Down Regulated
yfeK	946876	Uncharacterized protein yfeK	['Defense mechanisms', ' Primary Active Transporters', ' Protection']	Up Regulated
cysK	946877	Cysteine synthase A; Cysteine synthase		Down Regulated
ydhL	946168	Uncharacterized protein ydhL	[' Metabolism of other compounds', 'purine nucleotide biosynthetic process']	Up Regulated
plsX	946165	Fatty acid/phospholipid synthesis protein plsX		Down Regulated
nemA	946164	N-ethylmaleimide reductase		Ambiguous/Unsorted
pdxY	946162	Pyridoxamine kinase		Down Regulated
yiaG	948071	Uncharacterized HTH-type transcriptional regulator yiaG	[' RNA related', ' Type of regulation', ' Adaptation to stress', 'transcription', 'regulation of transcription DNA dependent', 'response t	Temporarly Up Regulated
yiaF	948072	Uncharacterized protein yiaF	['Carbohydrate transport and metabolism', ' Carbon compound utilization', 'phosphoenolpyruvate dependent sugar phosphotransf	Down Regulated
yhjK	948048	c4341; EC55989_3976; ECDH10B_3706; APECO1_2919; ECIAI1_3680; b3529; ECIAI39_4032; ECED1_4207; ECS88_3943; ECUMN_4036; UTI89_C4061; Z4943; E2348C_3771		Ambiguous/Unsorted
bcsZ	948046	Endoglucanase		Down Regulated
bcsB	948045	Cyclic di-GMP-binding protein		Down Regulated
ybeZ	948044	PhoH-like protein		Temporarly Up Regulated
pdxK	946881	Pyridoxine kinase		Up Regulated
kdgK	948041	2-dehydro-3-deoxygluconokinase		Temporarly Up Regulated
cysU	946882	Sulfate transport system permease protein cysT		Down Regulated
cysP	946883	Thiosulfate-binding protein		Down Regulated
ptsH	946886	Phosphocarrier protein HPr		Down Regulated
yfeS	946887	Uncharacterized protein yfeS	[]	Down Regulated

cysM	946888	Cysteine synthase B; Cysteine synthase		Down Regulated
rsxG	946158	Electron transport complex protein rnfG		Down Regulated
leuE	946157	Leucine efflux protein		Down Regulated
yhjJ	948040	Protein yhjJ		Down Regulated
hdhA	946151	7-alpha-hydroxysteroid dehydrogenase		Temporarly Up Regulated
murC	946153	UDP-N-acetylmuramate--L-alanine ligase		Down Regulated
yhjV	948057	Inner membrane transport protein yhjV		Temporarly Down Regulated
csiR	948055	Uncharacterized HTH-type transcriptional regulator ygaE		Ambiguous/Unsorted
prpE	946891	Propionate--CoA ligase		Up Regulated
cyoC	946897	Cytochrome o ubiquinol oxidase subunit 3		Down Regulated
mntH	946899	Manganese transport protein mntH		Up Regulated
uidA	946149	Beta-glucuronidase		Up Regulated
rsxB	946146	Electron transport complex protein rnfB		Temporarly Down Regulated
topB	946141	DNA topoisomerase 3		Down Regulated
pntB	946144	NAD(P) transhydrogenase subunit beta		Down Regulated
tqsA	946142	AI-2 transport protein tqsA		Temporarly Down Regulated
fadL	946820	Long-chain fatty acid transport protein		Temporarly Up Regulated
fecE	948819	Fe(3+) dicitrate transport ATP-binding protein fecE		Down Regulated
dnaJ	944753	Chaperone protein dnaJ		Down Regulated
dnaK	944750	Chaperone protein dnaK		Temporarly Up Regulated
aroC	946814	Chorismate synthase		Down Regulated
sixA	946815	Phosphohistidine phosphatase sixA		Up Regulated
fecD	946816	Fe(3+) dicitrate transport system permease protein fecD		Down Regulated
insB	944743	Insertion element IS1 2/3 protein insB; Insertion element IS1 2/3/4 protein insA; Insertion element IS1 protein insA; Insertion element IS1 4 protein insB; Insertion element IS1 1/5/6 protein ins		Ambiguous/Unsorted
sspA	944744	Stringent starvation protein A		Down Regulated
nfrA	944741	Bacteriophage N4 adsorption protein A		Ambiguous/Unsorted
efeO	945603	UPF0409 protein ycdO		Temporarly Up Regulated
putP	945602	Sodium/proline symporter		Down Regulated
yceA	945601	UPF0176 protein yceA		Down Regulated
ypfG	946828	Uncharacterized protein ypfG	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Temporarly Down Regulated
evgS	946844	Sensor protein evgS; Sensor protein		Temporarly Down Regulated
BAX	948089	Protein bax		Temporarly Down Regulated
ydiI	946190	Esterase ydiI		Down Regulated
malS	948088	Alpha-amylase		Down Regulated
sapB	946191	Peptide transport system permease protein sapB		Temporarly Up Regulated
xylR	948086	Xylose operon regulatory protein		Up Regulated
ygcE	946193	Uncharacterized sugar kinase ygcE	[' Central intermediary metabolism', 'carbohydrate metabolic process']	Temporarly Up Regulated
yiaJ	948084	HTH-type transcriptional regulator yiaJ		Ambiguous/Unsorted
ydiH	946194	Uncharacterized protein ydiH	['proteolysis']	Temporarly Down Regulated
trxA	948289	Thioredoxin-1		Temporarly Down Regulated
yafE	946197	Uncharacterized protein yafE	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid biosynthetic process']	Ambiguous/Unsorted
glyS	948080	Glycyl-tRNA synthetase beta subunit		Down Regulated
ilvY	948284	HTH-type transcriptional regulator ilvY		Temporarly Down Regulated
rstA	946199	Transcriptional regulatory protein rstA		Down Regulated
ilvL	948283	IlvGMEDA operon leader peptide		Temporarly Up Regulated
dsdA	946837	D-serine dehydratase; D-serine dehydratase 1		Ambiguous/Unsorted
fecB	946838	Fe(3+) dicitrate-binding periplasmic protein		Temporarly Up Regulated
fecI	946839	Probable RNA polymerase sigma factor fecI; RNA polymerase sigma factor		Up Regulated
yjhP	946851	Uncharacterized protein yjhP	['Replication recombination and repair']	Up Regulated
yfeC	946857	Uncharacterized protein yfeC	[]	Up Regulated
ypeC	946855	Uncharacterized protein ypeC	['Energy production and conversion']	Temporarly Up Regulated
rhlB	948290	ATP-dependent RNA helicase rhlB		Down Regulated
gpp	948291	Guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase		Down Regulated
yjjP	948812	Inner membrane protein yjjP		Ambiguous/Unsorted
rep	948292	ATP-dependent DNA helicase rep		Down Regulated
wzyE	948293	Putative ECA polymerase		Down Regulated
ydhZ	946180	Uncharacterized protein ydhZ	[]	Temporarly Up Regulated
rffH	948299	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 2		Down Regulated
sufS	946185	Cysteine desulfurase		Temporarly Up Regulated
ydiK	946183	UPF0118 inner membrane protein ydiK		Ambiguous/Unsorted
insG	948805	Transposase insG for insertion sequence element IS4		Up Regulated
yneE	946188	UPF0187 protein yneE		Down Regulated
wzxE	948294	Protein wzxE		Down Regulated
hyi	946186	Hydroxypyruvate isomerase		Ambiguous/Unsorted
yjhB	948807	Putative metabolite transport protein yjhB		Up Regulated
rffA	948296	Lipopolysaccharide biosynthesis protein rffA		Down Regulated
lpcA	949134	Phosphoheptose isomerase		Ambiguous/Unsorted
acpH	949132	Acyl carrier protein phosphodiesterase		Up Regulated
secD	949133	Protein-export membrane protein secD		Down Regulated
tgt	949130	Queuine tRNA-ribosyltransferase		Down Regulated
malZ	949131	Maltodextrin glucosidase		Down Regulated
puuA	946202	Gamma-glutamylputrescine synthetase		Down Regulated
trpA	946204	Tryptophan synthase alpha chain		Down Regulated
leuD	945642	3-isopropylmalate dehydratase small subunit		Down Regulated

yadD	944781	Uncharacterized protein yadD	['Replication recombination and repair', 'DNA recombination']	Temporarly Up Regulated
ydjM	945644	Inner membrane protein ydjM		Up Regulated
araC	944780	Arabinose operon regulatory protein		Up Regulated
ydiE	946205	Uncharacterized protein ydiE	['Amino acid transport and metabolism', ' Building block biosynthesis', 'metabolic process', 'biosynthetic process', 'aromatic amino	Up Regulated
flgL	945646	Flagellar hook-associated protein 3		Down Regulated
ydiA	946207	Uncharacterized protein yuaU; Putative phosphotransferase	[]	Ambiguous/Unsorted
ppsR	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA		Ambiguous/Unsorted
flgG	945647	Flagellar basal-body rod protein flgG		Down Regulated
baeR	946605	Transcriptional regulatory protein baeR		Up Regulated
ubiG	946607	3-demethylubiquinone-9 3-methyltransferase		Down Regulated
rffE	944789	UDP-N-acetylglucosamine 2-epimerase		Temporarly Down Regulated
ydiB	946200	Quinate/shikimate dehydrogenase		Temporarly Down Regulated
nrdA	946612	Ribonucleoside-diphosphate reductase; Ribonucleoside-diphosphate reductase 1 subunit alpha		Down Regulated
ybiS	945441	Uncharacterized protein ybiS	['phosphoenolpyruvate dependent sugar phosphotransferase system']	Ambiguous/Unsorted
gyrA	946614	DNA gyrase subunit A		Down Regulated
hicB	946001	Uncharacterized HTH-type transcriptional regulator ydcQ		Up Regulated
ydcQ	946001	Uncharacterized HTH-type transcriptional regulator ydcQ	['Coenzyme transport and metabolism']	Up Regulated
fabH	946003	3-oxoacyl-[acyl-carrier-protein] synthase 3		Down Regulated
gltJ	945443	Glutamate/aspartate transport system permease protein gltJ		Down Regulated
ydcR	946004	Uncharacterized HTH-type transcriptional regulator ydcR	[]	Up Regulated
flgF	945639	Flagellar basal-body rod protein flgF		Down Regulated
yceF	945631	Maf-like protein yceF 1; Maf-like protein yceF		Up Regulated
yniC	945632	Phosphatase yniC		Temporarly Down Regulated
tolB	945429	Protein tolB		Down Regulated
ydiU	946219	UPF0061 protein ydiU		Down Regulated
pspD	945635	Phage shock protein D		Up Regulated
folA	944790	Dihydrofolate reductase; Dihydrofolate reductase type 1		Temporarly Up Regulated
flgE	945636	Flagellar hook protein flgE		Down Regulated
yaaH	944792	Inner membrane protein yaaH		Ambiguous/Unsorted
flgN	945634	Flagella synthesis protein flgN		Down Regulated
murE	944791	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate--2,6-diaminopimelate ligase		Down Regulated
aceF	944794	Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex		Down Regulated
setA	944793	Sugar efflux transporter A		Temporarly Down Regulated
leuB	944798	3-isopropylmalate dehydrogenase		Down Regulated
otsB	946406	Trehalose-phosphate phosphatase		Up Regulated
ftsI	944799	Peptidoglycan synthetase ftsI		Down Regulated
yncB	946012	Putative NADP-dependent oxidoreductase yncB		Ambiguous/Unsorted
ycjG	946013	Z2450; ECUMN_1620; ECED1_1533; ECDH10B_1444; b1325; UTI89_C1596; E2348C_1518; ECIAI1_1350; c1797; APECO1_478; ECS88_1467; ECIAI39_1677; EC55989_1489		Temporarly Down Regulated
yccA	946016	Inner membrane protein yccA		Down Regulated
ybiJ	945433	Uncharacterized protein ybiJ	[]	Up Regulated
araB	946017	Ribulokinase		Up Regulated
glnQ	945435	Glutamine transport ATP-binding protein glnQ		Down Regulated
yfcA	946808	UPF0721 transmembrane protein yfcA		Down Regulated
csgC	945623	Putative curli production protein csgC		Down Regulated
yfcL	946804	Uncharacterized protein yfcL	['Cell wall membrane envelope biogenesis', 'amino acid biosynthetic process', 'aromatic amino acid family biosynthetic process']	Down Regulated
ylbG	946803	b0502; ECDH10B_0458		Down Regulated
ribD	945620	Riboflavin biosynthesis protein ribD		Down Regulated
glnP	945621	Glutamine transport system permease protein glnP		Temporarly Down Regulated
dapB	944762	Dihydrodipicolinate reductase		Down Regulated
ileS	944761	Isoleucyl-tRNA synthetase		Down Regulated
hcaD	945427	3-phenylpropionate/cinnamic acid dioxygenase ferredoxin--NAD(+) reductase component		Temporarly Up Regulated
mepA	946812	Penicillin-insensitive murein endopeptidase		Down Regulated
ybiH	945421	Uncharacterized HTH-type transcriptional regulator ybiH	['Defense mechanisms', ' Primary Active Transporters']	Ambiguous/Unsorted
exbB	945420	Biopolymer transport protein exbB		Down Regulated
cyoB	945615	Ubiquinol oxidase subunit 1		Down Regulated
ndk	945611	Nucleoside diphosphate kinase		Temporarly Down Regulated
msyB	945612	Acidic protein msyB		Temporarly Up Regulated
rbbA	947998	Uncharacterized ABC transporter ATP-binding protein yhiH		Temporarly Up Regulated
carB	944775	Carbamoyl-phosphate synthase large chain		Down Regulated
ftsA	944778	Cell division protein ftsA		Down Regulated
nikR	947995	Nickel-responsive regulator		Temporarly Up Regulated
sspB	944774	Stringent starvation protein B		Down Regulated
kefC	944773	Glutathione-regulated potassium-efflux system protein kefC		Ambiguous/Unsorted
rpmD	947797	50S ribosomal protein L30		Down Regulated
secY	947799	Preprotein translocase subunit secY; Preprotein translocase secY subunit		Down Regulated
rplO	947798	50S ribosomal protein L15		Down Regulated
rpsD	947793	30S ribosomal protein S4		Down Regulated
rpsK	947792	30S ribosomal protein S11		Down Regulated
rpsE	947795	30S ribosomal protein S5		Down Regulated
rpoA	947794	DNA-directed RNA polymerase subunit alpha		Down Regulated
rpsM	947791	30S ribosomal protein S13; 30S ribosomal protein		Down Regulated
metC	946240	Cystathionine beta-lyase metC		Down Regulated
ybdG	946243	Uncharacterized protein ybdG	[]	Down Regulated
pspF	945683	Psp operon transcriptional activator		Down Regulated

potD	945682	Spermidine/putrescine-binding periplasmic protein		Down Regulated
fiu	946246	Catecholate siderophore receptor fiu		Temporarly Up Regulated
cobB	945687	NAD-dependent deacetylase		Up Regulated
panD	945686	Aspartate 1-decarboxylase		Down Regulated
nudJ	945689	Phosphatase nudJ		Down Regulated
ybhL	945401	Inner membrane protein ybhL		Temporarly Up Regulated
rplQ	947784	50S ribosomal protein L17		Down Regulated
trkA	947788	Trk system potassium uptake protein trkA		Up Regulated
yhdN	947785	Uncharacterized protein yhdN	[]	Ambiguous/Unsorted
yehQ	946654	ECIAI39_0891; E2348C_2268; APECO1_4427; c2652; ECS88_2265; b2122; Z3295; ECED1_2478; ECUMN_2456; UTI89_C2394; ECDH10B_2277; ECIAI1_2198		Up Regulated
spy	946253	Spheroplast protein Y		Up Regulated
ycfP	945676	UPF0227 protein ycfP		Temporarly Up Regulated
astB	946259	N-succinylarginine dihydrolase		Ambiguous/Unsorted
lptE	946257	LPS-assembly lipoprotein lptE		Down Regulated
lolC	945673	Lipoprotein-releasing system transmembrane protein lolC		Down Regulated
flgB	945678	Flagellar basal-body rod protein flgB		Down Regulated
parE	947501	DNA topoisomerase 4 subunit B		Down Regulated
ybiX	947502	PKHD-type hydroxylase ybiX		Ambiguous/Unsorted
yrdB	947774	Uncharacterized protein yrdB	[' Building block biosynthesis', 'purine nucleotide biosynthetic process', 'aromatic amino acid family biosynthetic process']	Temporarly Down Regulated
yrdA	947775	Protein yrdA		Down Regulated
fmt	947779	Methionyl-tRNA formyltransferase		Ambiguous/Unsorted
nlpC	946220	Probable lipoprotein nlpC		Up Regulated
holB	945661	DNA polymerase III subunit delta'		Down Regulated
thrS	946222	Threonyl-tRNA synthetase		Down Regulated
mrp	946627	Protein mrp		Ambiguous/Unsorted
pntA	946628	NAD(P) transhydrogenase subunit alpha		Down Regulated
ycfS	945666	Uncharacterized protein ycfS	[]	Down Regulated
aroH	946229	Phospho-2-dehydro-3-deoxyheptonate aldolase, Trp-sensitive		Down Regulated
infC	946225	Translation initiation factor IF-3		Down Regulated
accC	947761	Biotin carboxylase		Down Regulated
aaeR	947760	HTH-type transcriptional activator aaeR		Up Regulated
yhdV	947767	Uncharacterized protein yhdV	[' Electrochemical potential driven transporters', ' Protection', 'cell cycle', 'cell division']	Up Regulated
acrF	947768	Acriflavine resistance protein F		Up Regulated
yagV	946631	Uncharacterized protein yagV	[]	Up Regulated
yegU	946630	Uncharacterized protein yegU	[]	Down Regulated
yhdY	947764	Inner membrane amino-acid ABC transporter permease protein yhdY		Down Regulated
yceD	945650	Uncharacterized protein yceD	[]	Down Regulated
ydiZ	946232	Uncharacterized protein ydiZ	[' Carbon compound utilization', ' Energy metabolism carbon ', 'translation']	Temporarly Up Regulated
yfaA	946618	Uncharacterized protein yfaA	['Replication recombination and repair', ' RNA related', ' Type of regulation']	Ambiguous/Unsorted
rpmF	945657	50S ribosomal protein L32		Down Regulated
ycfH	945656	Uncharacterized deoxyribonuclease ycfH	[]	Temporarly Up Regulated
ydjN	946238	Uncharacterized symporter ydjN	[]	Down Regulated
yhcH	947750	Uncharacterized protein yhcH	['Carbohydrate transport and metabolism', 'carbohydrate metabolic process']	Up Regulated
flgK	945648	Flagellar hook-associated protein 1		Down Regulated
fhuE	945649	FhuE receptor		Ambiguous/Unsorted
yegS	946626	Probable lipid kinase yegS; Lipid kinase yegS		Up Regulated
mreD	947756	Rod shape-determining protein mreD		Temporarly Down Regulated
nanK	947757	N-acetylmannosamine kinase		Temporarly Up Regulated
tolA	946625	Protein tolA		Down Regulated
accB	947758	Biotin carboxyl carrier protein of acetyl-CoA carboxylase		Down Regulated
hpt	946624	Hypoxanthine phosphoribosyltransferase		Down Regulated
ccmH	946623	Cytochrome c-type biogenesis protein ccmH		Down Regulated
cyaA	947755	Adenylate cyclase		Temporarly Down Regulated
nanE	947745	Putative N-acetylmannosamine-6-phosphate 2-epimerase		Up Regulated
aaeA	947748	p-hydroxybenzoic acid efflux pump subunit aaeA		Up Regulated
aaeB	947747	p-hydroxybenzoic acid efflux pump subunit aaeB		Up Regulated
glgS	947533	Glycogen synthesis protein glgS		Up Regulated
hybC	945182	Hydrogenase-2 large chain		Up Regulated
flgI	947534	Flagellar P-ring protein		Down Regulated
yejL	946694	UPF0352 protein yejL		Ambiguous/Unsorted
yqiK	947537	Inner membrane protein yqiK		Up Regulated
rtn	946695	Protein rtn		Temporarly Down Regulated
nanT	947740	Putative sialic acid transporter; Putative sialic acid transporter 1		Up Regulated
lpxT	946693	Inner membrane protein yeiU		Down Regulated
fepB	947538	Ferrienterobactin-binding periplasmic protein		Ambiguous/Unsorted
yeeN	946493	UPF0082 protein yeeN		Temporarly Down Regulated
guaA	947334	GMP synthase [glutamine-hydrolyzing]		Down Regulated
rhtC	948317	Threonine efflux protein		Down Regulated
sulA	947335	Cell division inhibitor sulA		Up Regulated
tatB	948319	Sec-independent protein translocase protein tatB homolog; Sec-independent protein translocase protein tatB		Down Regulated
dapE	948313	Succinyl-diaminopimelate desuccinylase		Ambiguous/Unsorted
pldB	948314	Lysophospholipase L2		Temporarly Down Regulated
shiA	946495	Shikimate transporter		Down Regulated
RhtB	948316	Homoserine/homoserine lactone efflux protein		Down Regulated

yhcG	947739	Uncharacterized protein yhcG	[' Macromolecule degradation']	Down Regulated	
glgB	947940	1,4-alpha-glucan-branching enzyme		Down Regulated	
metR	948310	HTH-type transcriptional regulator metR		Up Regulated	
hemY	948311	Protein hemY		Down Regulated	
glgX	947941	Glycogen debranching enzyme		Up Regulated	
yeeJ	946498	Uncharacterized protein yeeJ		Up Regulated	
ushA	947331	Protein ushA		Down Regulated	
yejM	946685	Inner membrane protein yejM		Down Regulated	
aroB	947927	3-dehydroquinate synthase		Down Regulated	
flgC	946687	Flagellar basal-body rod protein flgC		Down Regulated	
nuoM	947731	NADH-quinone oxidoreductase subunit M		Down Regulated	
yrbG	947730	Inner membrane protein yrbG		Ambiguous/Unsorted	
yejF	946689	Uncharacterized ABC transporter ATP-binding protein yejF		Down Regulated	
pgpA	947542	Phosphatidylglycerophosphatase A		Up Regulated	
ahpF	947540	Alkyl hydroperoxide reductase subunit F		Down Regulated	
kdsD	947734	Arabinose 5-phosphate isomerase		Down Regulated	
rtcB	947929	Protein rtcB		Temporarly Up Regulated	
yggG	945173	Uncharacterized metalloprotease yggG	[]	Up Regulated	
osmF	946681	Putative osmoprotectant uptake system substrate-binding protein osmF		Temporarly Up Regulated	
bglX	946682	Periplasmic beta-glucosidase		Temporarly Down Regulated	
rfaE	947548	Bifunctional protein hldE		Down Regulated	
flgM	946684	Negative regulator of flagellin synthesis		Down Regulated	
yodA	946480	Metal-binding protein yodA		Up Regulated	
zinT	946480	Metal-binding protein yodA		Up Regulated	
ygeA	947348	Uncharacterized protein ygeA	[]	Up Regulated	
hchA	946481	Chaperone protein hchA		Ambiguous/Unsorted	
pldA	948307	Phospholipase A1		Down Regulated	
yedW	946486	Probable transcriptional regulatory protein yedW		Temporarly Down Regulated	
damX	947930	Protein damX		Down Regulated	
rffG	948300	dTDP-glucose 4,6-dehydratase		Down Regulated	
glgP	947931	Phosphorylase; Glycogen phosphorylase		Down Regulated	
rffM	948301	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase		Down Regulated	
yhbJ	947727	UPF0042 protein yhbJ		Down Regulated	
glpE	947935	Thiosulfate sulfurtransferase glpE		Temporarly Down Regulated	
glgA	947932	Glycogen synthase		Temporarly Up Regulated	
gltB	947724	Glutamate synthase [NADPH] large chain		Down Regulated	
gltD	947723	Glutamate synthase [NADPH] small chain		Down Regulated	
speE	947726	Spermidine synthase		Down Regulated	
ampE	946678	Protein ampE		Ambiguous/Unsorted	
lptB	947725	Lipopolysaccharide export system ATP-binding protein lptB		Down Regulated	
fruK	946676	1-phosphofructokinase		Temporarly Up Regulated	
secG	947720	Protein-export membrane protein secG		Down Regulated	
npr	947914	Phosphocarrier protein NPr		Ambiguous/Unsorted	
yeiP	946674	Elongation factor P-like protein		Down Regulated	
lptC	947722	Lipopolysaccharide export system protein lptC		Down Regulated	
bioH	947916	Carboxylesterase bioH		Down Regulated	
fruA	946672	PTS system fructose-specific EIIBC component		Temporarly Up Regulated	
aes	947514	Acetyl esterase		Up Regulated	
araA	947511	L-arabinose isomerase		Up Regulated	
lplT	947317	Lysophospholipid transporter lplT		Temporarly Up Regulated	
kduI	947319	4-deoxy-L-threo-5-hexosulose-uronate ketol-isomerase		Down Regulated	
yafC	947507	Uncharacterized HTH-type transcriptional regulator yafC	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated	
rsxE	947509	Electron transport complex protein rnfE		Down Regulated	
galR	947314	HTH-type transcriptional regulator galR		Temporarly Down Regulated	
malP	947922	Phosphorylase; Maltodextrin phosphorylase		Down Regulated	
malQ	947923	4-alpha-glucanotransferase		Down Regulated	
gntT	947924	High-affinity gluconate transporter		Down Regulated	
kdsC	947717	3-deoxy-D-manno-octulosonate 8-phosphate phosphatase		Ambiguous/Unsorted	
hpf	947718	Probable sigma(54) modulation protein		Down Regulated	
pspB	945893	Phage shock protein B		Up Regulated	
speD	947719	S-adenosylmethionine decarboxylase proenzyme		Down Regulated	
lptA	947920	Lipopolysaccharide export system protein lptA		Down Regulated	
speB	947715	Agmatinase		Down Regulated	
yeiH	946668	UPF0324 inner membrane protein yeiH; Probable endonuclease 4		Up Regulated	
ybjQ	945493	UPF0145 protein ybjQ		Up Regulated	
rpoN	947714	RNA polymerase sigma-54 factor		Down Regulated	
nfo	946669	Endonuclease 4; Probable endonuclease 4		Down Regulated	
yrbD	947712	Uncharacterized protein yrbD	['Amino acid transport and metabolism']	Down Regulated	
mlaD	947712	Uncharacterized protein yrbD		Down Regulated	
ybjS	945495	Uncharacterized protein ybjS	[]	Ambiguous/Unsorted	
aat	945490	Leucyl/phenylalanyl-tRNA--protein transferase		Down Regulated	
nudE	947906	ADP compounds hydrolase nudE		Down Regulated	
mlaC	947710	Protein yrbC		Down Regulated	
yrbC	947710	Protein yrbC		Down Regulated	

yohD	946661	Inner membrane protein yohD		Ambiguous/Unsorted	
thrC	945198	Threonine synthase		Down Regulated	
pbpG	946662	D-alanyl-D-alanine endopeptidase		Ambiguous/Unsorted	
ybjD	945498	Uncharacterized protein ybjD	['SOS response']	Temporarly Up Regulated	
entD	945194	4'-phosphopantetheinyl transferase entD		Temporarly Up Regulated	
rpmA	945190	50S ribosomal protein L27		Down Regulated	
cusA	945191	Cation efflux system protein cusA		Down Regulated	
phoP	945697	Transcriptional regulatory protein phoP		Ambiguous/Unsorted	
yiaC	946460	Uncharacterized N-acetyltransferase yiaC	['amino acid biosynthetic process']	Temporarly Down Regulated	
nudF	947519	ADP-ribose pyrophosphatase		Down Regulated	
hslR	947912	Heat shock protein 15		Ambiguous/Unsorted	
potC	945691	Spermidine/putrescine transport system permease protein potC		Down Regulated	
ymdC	947321	Uncharacterized protein ymdC	[]	Down Regulated	
ompR	947913	Transcriptional regulatory protein ompR		Temporarly Up Regulated	
hflD	945693	ECIAI1_1170; ECS88_1147; ECDH10B_1204; b1132; ECIAI39_2005; ECED1_1276; E2348C_1273; ECUMN_1376; EC55989_1245		Temporarly Down Regulated	
dusB	947707	tRNA-dihydrouridine synthase B		Down Regulated	
prmA	947708	Ribosomal protein L11 methyltransferase		Down Regulated	
artP	945489	Arginine transport ATP-binding protein artP		Ambiguous/Unsorted	
ygjD	947578	Probable O-sialoglycoprotein endopeptidase		Ambiguous/Unsorted	
murJ	945487	Virulence factor mviN homolog		Down Regulated	
potF	945480	Putrescine-binding periplasmic protein		Temporarly Up Regulated	
ybjC	945481	Uncharacterized protein ybjC	['Energy production and conversion', 'Translation ribosomal structure and biogenesis', ' Energy metabolism carbon ', ' Building bl	Ambiguous/Unsorted	
dnaG	947570	DNA primase		Up Regulated	
gmr	945868	Protein gmr		Down Regulated	
rimK	945484	Ribosomal protein S6 modification protein		Down Regulated	
holA	947573	DNA polymerase III subunit delta		Down Regulated	
potI	945485	Putrescine transport system permease protein potI		Temporarly Up Regulated	
csrD	947702	Uncharacterized protein yhdA		Temporarly Down Regulated	
murA	947703	UDP-N-acetylglucosamine 1-carboxyvinyltransferase		Down Regulated	
btuF	947574	Vitamin B12-binding protein		Down Regulated	
srlA	947575	Glucitol/sorbitol permease IIC component		Temporarly Up Regulated	
yhhQ	947984	Inner membrane protein yhhQ		Ambiguous/Unsorted	
ymjA	945874	Uncharacterized protein ymjA	['Amino acid transport and metabolism', ' Electrochemical potential driven transporters']	Ambiguous/Unsorted	
ribE	946453	6,7-dimethyl-8-ribityllumazine synthase		Down Regulated	
yhhS	947982	UPF0226 protein yhhS		Temporarly Down Regulated	
potG	945476	Putrescine transport ATP-binding protein potG		Temporarly Up Regulated	
tyrR	945879	Transcriptional regulatory protein tyrR		Up Regulated	
ftsX	947969	Cell division protein ftsX		Down Regulated	
ybjI	945470	Phosphatase ybjI		Up Regulated	
ybjJ	945471	Inner membrane protein ybjJ		Temporarly Down Regulated	
ihfA	945472	Integration host factor subunit alpha		Down Regulated	
ybjK	945473	Uncharacterized HTH-type transcriptional regulator ybjK	['translation', 'ion transport']	Up Regulated	
puuD	945882	Gamma-glutamyl-gamma-aminobutyrate hydrolase		Down Regulated	
yhhN	947973	Uncharacterized membrane protein yhhN	[' Energy metabolism carbon ']	Ambiguous/Unsorted	
ybaV	945884	Uncharacterized protein ybaV	[]	Up Regulated	
pspA	945887	Phage shock protein A		Up Regulated	
puuR	945886	HTH-type transcriptional regulator puuR		Ambiguous/Unsorted	
ygdR	947304	Uncharacterized lipoprotein ygdR	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid metabolic process']	Temporarly Up Regulated	
hemD	948587	Uroporphyrinogen-III synthase		Down Regulated	
livJ	947971	Leu/Ile/Val-binding protein		Down Regulated	
rpoH	947970	RNA polymerase sigma-32 factor; RNA polymerase sigma factor		Up Regulated	
ascG	947305	HTH-type transcriptional regulator ascG		Temporarly Down Regulated	
ygiF	947554	Uncharacterized protein ygiF	['Amino acid transport and metabolism']	Temporarly Down Regulated	
yliI	945467	Soluble aldose sugar dehydrogenase yliI		Up Regulated	
ygiM	947555	Uncharacterized protein ygiM		Down Regulated	
rimO	945465	Ribosomal protein S12 methylthiotransferase rimO		Down Regulated	
yliF	945463	Uncharacterized membrane protein yliF	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription	Up Regulated	
bacA	947551	Undecaprenyl-diphosphatase		Down Regulated	
gsiC	945460	Glutathione transport system permease protein gsiC		Ambiguous/Unsorted	
gsiD	945461	Glutathione transport system permease protein gsiD		Down Regulated	
ribC	945848	Riboflavin synthase alpha chain		Ambiguous/Unsorted	
yrbA	947958	Uncharacterized protein yrbA	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid biosynthetic process']	Down Regulated	
trpE	945846	Anthranilate synthase component 1		Down Regulated	
livM	947966	High-affinity branched-chain amino acid transport system permease protein livM		Temporarly Up Regulated	
ampG	946438	Protein ampG		Down Regulated	
yjcE	948577	Uncharacterized Na(+)/H(+) exchanger yjcE	['rRNA processing']	Down Regulated	
livH	947965	High-affinity branched-chain amino acid transport system permease protein livH		Temporarly Up Regulated	
ydgD	946436	Uncharacterized serine protease ydgD	['response to stress']	Up Regulated	
livG	947967	High-affinity branched-chain amino acid transport ATP-binding protein livG		Temporarly Up Regulated	
livF	947961	High-affinity branched-chain amino acid transport ATP-binding protein livF		Down Regulated	
yhhK	947963	Uncharacterized protein yhhK	[' Carbon compound utilization', ' Metabolism of other compounds']	Down Regulated	
ybeY	946430	Putative metalloprotease ybeY		Temporarly Up Regulated	
ghra	946431	Glyoxylate/hydroxypyruvate reductase A		Down Regulated	
yjcH	948574	Inner membrane protein yjcH		Ambiguous/Unsorted	

gsiA	945457	Glutathione import ATP-binding protein gsiA		Down Regulated
gsiB	945459	Glutathione-binding protein gsiB		Down Regulated
rpoD	947567	RNA polymerase sigma factor rpoD; RNA polymerase sigma factor		Temporarly Down Regulated
moeA	945454	Molybdopterin biosynthesis protein moeA		Down Regulated
dacC	945455	D-alanyl-D-alanine carboxypeptidase dacC		Temporarly Up Regulated
iaaA	945456	Isoaspartyl peptidase		Down Regulated
folC	945451	Bifunctional protein folC		Down Regulated
moeB	945452	Molybdopterin biosynthesis protein moeB		Ambiguous/Unsorted
mug	947560	G/U mismatch-specific DNA glycosylase		Ambiguous/Unsorted
ggt	947947	Gamma-glutamyltranspeptidase		Up Regulated
yciW	945859	Uncharacterized protein yciW	['Lipid transport and metabolism']	Down Regulated
proB	946425	Glutamate 5-kinase		Ambiguous/Unsorted
yjcB	948569	Uncharacterized protein yjcB	[]	Down Regulated
rnb	945864	Exoribonuclease 2		Down Regulated
soxR	948566	Redox-sensitive transcriptional activator soxR		Up Regulated
fecA	946427	Fe(3+) dicitrate transport protein fecA		Down Regulated
soxS	948567	Regulatory protein soxS		Temporarly Up Regulated
yrbB	947954	Uncharacterized protein yrbB	['Cell wall membrane envelope biogenesis', ' Macromolecules cellular constituent biosynthesis', 'cell cycle', 'cell division']	Down Regulated
mlaB	947954	Uncharacterized protein yrbB		Down Regulated
ugpC	947953	sn-glycerol-3-phosphate import ATP-binding protein ugpC		Temporarly Up Regulated
ydfI	945861	Uncharacterized oxidoreductase ydfI	[' Carbon compound utilization']	Temporarly Down Regulated
yciN	945860	Protein yciN		Temporarly Up Regulated
pgpB	945863	Phosphatidylglycerophosphatase B		Down Regulated
topA	945862	DNA topoisomerase 1		Down Regulated
uvrY	946424	Response regulator uvrY		Ambiguous/Unsorted
yjbR	948560	Uncharacterized protein yjbR	['Amino acid transport and metabolism', ' Central intermediary metabolism', 'amino acid biosynthetic process', 'biosynthetic proces	Temporarly Down Regulated
alr	948564	Alanine racemase, biosynthetic; Alanine racemase		Down Regulated
yjcD	948565	Putative permease yjcD		Temporarly Up Regulated
dapF	948364	Diaminopimelate epimerase		Down Regulated
ydgC	945156	Inner membrane protein ydgC		Temporarly Down Regulated
ydgJ	947164	Uncharacterized oxidoreductase ydgJ	[]	Temporarly Down Regulated
glnL	948360	Nitrogen regulation protein NR(II); Sensor protein		Down Regulated
glnG	948361	Nitrogen regulation protein NR(I)		Down Regulated
hemN	948362	Oxygen-independent coproporphyrinogen-III oxidase		Down Regulated
feaR	945941	Transcriptional activator feaR		Ambiguous/Unsorted
emrB	947167	Multidrug resistance protein B		Ambiguous/Unsorted
yihI	948363	UPF0241 protein yihI		Up Regulated
luxS	947168	S-ribosylhomocysteine lyase		Down Regulated
iclR	948524	Acetate operon repressor		Down Regulated
yihL	948368	Uncharacterized HTH-type transcriptional regulator yihL	['Amino acid transport and metabolism', ' Carbon compound utilization', ' Central intermediary metabolism', ' Primary Active Transp	Down Regulated
rfbA	945154	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 1		Down Regulated
ubiE	948926	Ubiquinone/menaquinone biosynthesis methyltransferase ubiE		Down Regulated
typA	948369	GTP-binding protein typA/BipA; GTP-binding protein typA/bipA		Down Regulated
prfB	947369	Peptide chain release factor 2		Down Regulated
yccJ	948930	Uncharacterized protein yccJ	[' Macromolecules cellular constituent biosynthesis']	Temporarly Up Regulated
malY	945937	Protein malY		Temporarly Up Regulated
ybgS	945356	Uncharacterized protein ybgS	['Inorganic ion transport and metabolism', ' Electrochemical potential driven transporters', 'ion transport']	Temporarly Up Regulated
Cyca	948725	D-serine/D-alanine/glycine transporter		Down Regulated
fklB	948726	FKBP-type 22 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
ybiO	945935	Uncharacterized mscS family protein ybiO	[]	Temporarly Up Regulated
ytfB	948727	Uncharacterized protein ytfB	['Replication recombination and repair', 'DNA recombination', 'DNA integration']	Ambiguous/Unsorted
galE	945354	UDP-glucose 4-epimerase		Ambiguous/Unsorted
rpsR	948721	30S ribosomal protein S18		Down Regulated
priB	948722	Primosomal replication protein n		Down Regulated
fdx	947160	2Fe-2S ferredoxin		Temporarly Down Regulated
mngB	945359	Alpha-mannosidase mngB		Up Regulated
rpsF	948723	30S ribosomal protein S6		Down Regulated
ygfA	945167	Uncharacterized protein ygfA	['cell cycle', 'cell division']	Up Regulated
dtd	948378	D-tyrosyl-tRNA(Tyr) deacylase		Down Regulated
dbpA	947153	ATP-independent RNA helicase dbpA		Down Regulated
ycfL	948539	Uncharacterized protein ycfL	['Nucleotide transport and metabolism', 'Cell wall membrane envelope biogenesis', ' Building block biosynthesis']	Down Regulated
yfgI	945168	Uncharacterized protein yfgI	['Lipid transport and metabolism', ' Building block biosynthesis']	Temporarly Up Regulated
malE	948538	Maltose-binding periplasmic protein		Temporarly Up Regulated
malK	948537	Maltose/maltodextrin import ATP-binding protein malK		Down Regulated
ygaC	947156	Uncharacterized protein ygaC	[]	Up Regulated
cpdB	948729	ECs5191; ECP_4467; ECSE_4519; EcSMS35_4692; ECUMN_4750; Z5824; EcolC_3793; ECS88_4807; E2348C_4544; EC55989_4773; ECDH10B_4408; ECED1_5072; ECH74115_5730;		Temporarly Down Regulated
trkG	945932	Trk system potassium uptake protein trkG		Up Regulated
ascF	947154	PTS system arbutin-, cellobiose-, and salicin-specific EIIBC component		Up Regulated
feaB	945933	Phenylacetaldehyde dehydrogenase		Up Regulated
malF	948532	Maltose transport system permease protein malF		Down Regulated
lysC	948531	Aspartokinase; Lysine-sensitive aspartokinase 3		Down Regulated
pqiA	944999	Paraquat-inducible protein A		Ambiguous/Unsorted
malG	948530	Maltose transport system permease protein malG		Temporarly Up Regulated
ytjC	948918	Probable phosphoglycerate mutase gpmB		Temporarly Down Regulated

macB	945164	Macrolide export ATP-binding/permease protein macB		Temporarly Down Regulated
ybcL	945165	UPF0098 protein ybcL		Up Regulated
yigP	948915	Uncharacterized protein yigP	['protein secretion']	Down Regulated
yjtD	948924	Uncharacterized tRNA/rRNA methyltransferase lasT		Ambiguous/Unsorted
ytfH	948730	Uncharacterized HTH-type transcriptional regulator ytfH	[]	Up Regulated
yqeA	947358	Carbamate kinase-like protein yqeA		Temporarly Up Regulated
mocA	947356	Uncharacterized protein ygfJ		Temporarly Up Regulated
ygfJ	947356	Uncharacterized protein ygfJ	['electron transport']	Temporarly Up Regulated
glnA	948370	Glutamine synthetase		Down Regulated
ytfJ	948737	Uncharacterized protein ytfJ	['Energy production and conversion', 'Secondary metabolites biosynthesis transport and catabolism']	Up Regulated
ytfL	948735	UPF0053 inner membrane protein ytfL		Temporarly Down Regulated
modF	945368	Putative molybdenum transport ATP-binding protein modF		Down Regulated
yaiZ	947355	Uncharacterized protein yaiZ	[]	Ambiguous/Unsorted
gltK	947354	Glutamate/aspartate transport system permease protein gltK		Down Regulated
qorB	948731	Uncharacterized oxidoreductase ytfG		Up Regulated
ygeR	947352	Uncharacterized lipoprotein ygeR		Ambiguous/Unsorted
ygbA	947187	Uncharacterized protein ygbA	['Energy production and conversion', ' Primary Active Transporters']	Up Regulated
msrB	947188	Peptide methionine sulfoxide reductase msrB		Ambiguous/Unsorted
fdoI	948383	Formate dehydrogenase, cytochrome b556(fdo) subunit		Down Regulated
malM	948547	Maltose operon periplasmic protein		Temporarly Up Regulated
allS	945139	HTH-type transcriptional activator allS		Up Regulated
ydjA	945964	Putative NAD(P)H nitroreductase ydjA		Down Regulated
yddB	945961	Uncharacterized protein yddB	['Cell wall membrane envelope biogenesis', 'translation', 'ion transport']	Temporarly Up Regulated
hinT	948549	HIT-like protein hinT		Down Regulated
ybdJ	947183	Uncharacterized protein ybdJ	[' Protection', 'ion transport', 'iron ion transport']	Up Regulated
nuoN	945136	NADH-quinone oxidoreductase subunit N		Down Regulated
MltB	947184	Membrane-bound lytic murein transglycosylase B		Temporarly Down Regulated
lamB	948548	Maltoporin		Down Regulated
frvX	948388	Putative frv operon protein frvX		Ambiguous/Unsorted
yfiL	947106	Uncharacterized protein yfiL	['Replication recombination and repair', 'DNA recombination']	Temporarly Up Regulated
norR	947186	Anaerobic nitric oxide reductase transcription regulator norR		Up Regulated
tus	945135	DNA replication terminus site-binding protein		Up Regulated
recN	947105	DNA repair protein recN		Ambiguous/Unsorted
pmrD	945130	Signal transduction protein pmrD		Ambiguous/Unsorted
ffh	947102	Signal recognition particle protein		Temporarly Down Regulated
rimM	947101	Ribosome maturation factor rimM		Down Regulated
dgkA	948543	Diacylglycerol kinase		Ambiguous/Unsorted
mtn	948542	5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase		Down Regulated
ylaB	948951	Uncharacterized protein ylaB	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription	Up Regulated
yibA	948108	Protein yibA		Up Regulated
visC	947389	Protein visC		Down Regulated
efeU	948956	ECUMN_1201; ECIAI39_2139; ECS88_1033; ECDH10B_1089; EC55989_1127; b4490; ECED1_1172; ECIAI1_1062; E2348C_1067		Up Regulated
hypE	947182	Hydrogenase isoenzymes formation protein hypE		Temporarly Up Regulated
ubiH	947388	2-octaprenyl-6-methoxyphenol hydroxylase		Down Regulated
ybbO	945337	Uncharacterized oxidoreductase ybbO	[]	Down Regulated
fhlA	947181	Formate hydrogenlyase transcriptional activator		Up Regulated
thiL	947387	Thiamine-monophosphate kinase		Down Regulated
lyxK	948101	L-xylulose/3-keto-L-gulonate kinase		Ambiguous/Unsorted
sapF	945335	Peptide transport system ATP-binding protein sapF		Down Regulated
ppa	948748	Inorganic pyrophosphatase		Down Regulated
allR	945333	HTH-type transcriptional repressor allR		Up Regulated
ygfZ	947384	tRNA-modifying protein ygfZ		Temporarly Down Regulated
selB	948103	Selenocysteine-specific elongation factor		Down Regulated
yihW	948381	Uncharacterized HTH-type transcriptional regulator yihW	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depen	Temporarly Up Regulated
ydeN	945957	Uncharacterized sulfatase ydeN	['Signal transduction mechanisms', ' Metabolism of other compounds']	Temporarly Up Regulated
cueR	945332	HTH-type transcriptional regulator cueR		Up Regulated
aegA	947383	Protein aegA		Temporarly Up Regulated
fdoH	948395	Formate dehydrogenase-O iron-sulfur subunit		Down Regulated
dusA	948558	tRNA-dihydrouridine synthase A		Down Regulated
csrA	947176	Carbon storage regulator		Up Regulated
qorA	948556	Quinone oxidoreductase		Temporarly Up Regulated
dnaB	948555	Replicative DNA helicase		Down Regulated
rhaT	948398	L-rhamnose-proton symporter		Up Regulated
mppA	945951	Periplasmic murein peptide-binding protein		Up Regulated
allA	945141	Ureidoglycolate hydrolase		Up Regulated
ThiM	945142	Hydroxyethylthiazole kinase		Temporarly Down Regulated
dinF	948554	DNA-damage-inducible protein F		Ambiguous/Unsorted
yjbJ	948553	UPF0337 protein yjbJ		Temporarly Up Regulated
mtlA	948118	PTS system mannitol-specific EIICBA component		Temporarly Up Regulated
mtlR	948116	Mannitol operon repressor		Ambiguous/Unsorted
cydA	945341	Cytochrome d ubiquinol oxidase subunit 1		Up Regulated
mpl	948752	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl-meso-diaminopimelate ligase		Down Regulated
yibK	948119	Uncharacterized tRNA/rRNA methyltransferase yibK		Temporarly Down Regulated
yibH	948110	Inner membrane protein yibH		Up Regulated

zitB	945348	Zinc transporter zitB		Ambiguous/Unsorted	
yceB	947377	Uncharacterized lipoprotein yceB	['electron transport']	Down Regulated	
betB	947376	Betaine aldehyde dehydrogenase		Down Regulated	
ydhV	948756	Uncharacterized protein ydhV	[' Central intermediary metabolism']	Up Regulated	
cydB	945347	Cytochrome d ubiquinol oxidase subunit 2		Ambiguous/Unsorted	
fbp	948753	Fructose-1,6-bisphosphatase class 1		Ambiguous/Unsorted	
ygfF	947373	Uncharacterized oxidoreductase ygfF	['tricarboxylic acid cycle']	Ambiguous/Unsorted	
lysS	947372	Lysyl-tRNA synthetase; Lysyl-tRNA synthetase, heat inducible		Down Regulated	
yibF	948113	Uncharacterized GST-like protein yibF	[]	Temporarly Down Regulated	
yddA	945945	Inner membrane ABC transporter ATP-binding protein yddA		Up Regulated	
yibJ	948112	b3595; ECDH10B_3776; Z5017		Up Regulated	
alkA	947371	DNA-3-methyladenine glycosylase 2		Temporarly Down Regulated	
yobB	948329	Uncharacterized protein yobB	['Replication recombination and repair']	Up Regulated	
rluA	946262	Ribosomal large subunit pseudouridine synthase A; Pseudouridine synthase		Ambiguous/Unsorted	
ygaH	945111	Uncharacterized protein ygaH	['Transcription', ' RNA related', ' Type of regulation', ' Protection', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated	
fre	948325	NAD(P)H-flavin reductase		Down Regulated	
fadA	948324	3-ketoacyl-CoA thiolase		Up Regulated	
ubiD	948326	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Ambiguous/Unsorted	
tatA	948321	Sec-independent protein translocase protein tatA		Down Regulated	
ysgA	948320	Putative carboxymethylenebutenolidase		Down Regulated	
patA	947120	Putrescine aminotransferase		Up Regulated	
torA	946267	Trimethylamine-N-oxide reductase 1		Up Regulated	
apt	945113	Adenine phosphoribosyltransferase		Down Regulated	
metE	948323	5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase		Ambiguous/Unsorted	
acrA	945112	Acriflavine resistance protein A		Down Regulated	
ybbP	945118	Uncharacterized ABC transporter permease ybbP		Temporarly Down Regulated	
pyrF	947121	Orotidine 5'-phosphate decarboxylase		Down Regulated	
rhsD	945116	Protein rhsD		Up Regulated	
yjgH	948769	UPF0076 protein yjgH		Up Regulated	
secB	948123	Protein-export protein secB		Down Regulated	
trpD	945109	Anthranilate synthase component II		Down Regulated	
gpsA	948125	Glycerol-3-phosphate dehydrogenase [NAD(P)+]		Down Regulated	
moaE	945399	Molybdopterin-converting factor subunit 2		Temporarly Up Regulated	
pyrB	948767	Aspartate carbamoyltransferase catalytic chain; Aspartate carbamoyltransferase		Down Regulated	
rhsA	948120	Protein rhsA		Up Regulated	
pepB	948766	Peptidase B		Down Regulated	
treR	948760	HTH-type transcriptional regulator treR		Ambiguous/Unsorted	
ybhK	945390	UPF0052 protein ybhK		Temporarly Down Regulated	
ycfD	945391	Uncharacterized protein ycfD	[]	Up Regulated	
cysE	948126	Serine acetyltransferase		Down Regulated	
yibQ	948128	Uncharacterized protein yibQ	['proteolysis']	Temporarly Down Regulated	
ybbN	947119	Uncharacterized protein ybbN	['Nucleotide transport and metabolism']	Down Regulated	
pepQ	948335	Xaa-Pro dipeptidase		Down Regulated	
ynjH	946279	Uncharacterized protein ynjH	['Amino acid transport and metabolism']	Up Regulated	
ybbJ	945126	Inner membrane protein ybbJ		Temporarly Up Regulated	
ompW	945128	Outer membrane protein W		Temporarly Up Regulated	
gcvT	947390	Aminomethyltransferase		Down Regulated	
rfaF	948135	ADP-heptose--LPS heptosyltransferase 2		Down Regulated	
gcvP	947394	Glycine dehydrogenase [decarboxylating]		Down Regulated	
rfaC	948136	Lipopolysaccharide heptosyltransferase 1		Down Regulated	
ypdB	947395	Uncharacterized response regulatory protein ypdB	[]	Temporarly Up Regulated	
rfaD	948134	ADP-L-glycero-D-manno-heptose-6-epimerase		Down Regulated	
gcvH	947393	Glycine cleavage system H protein		Down Regulated	
yibN	948131	Uncharacterized protein yibN	[]	Down Regulated	
grxC	948132	Glutaredoxin-3		Down Regulated	
argI	948774	Ornithine carbamoyltransferase chain I; Ornithine carbamoyltransferase		Temporarly Down Regulated	
rraB	948773	Uncharacterized protein yjgD		Up Regulated	
yjgM	948772	Uncharacterized N-acetyltransferase yjgM	[]	Temporarly Up Regulated	
tdh	948139	L-threonine 3-dehydrogenase		Ambiguous/Unsorted	
kbl	948138	2-amino-3-ketobutyrate coenzyme A ligase		Temporarly Up Regulated	
uvrD	948347	DNA helicase II		Down Regulated	
rdoA	948346	Protein rdoA		Down Regulated	
mobA	948349	Molybdopterin-guanine dinucleotide biosynthesis protein A		Temporarly Up Regulated	
ybgC	948907	Acyl-CoA thioester hydrolase ybgC		Temporarly Down Regulated	
yihD	948348	Protein yihD		Down Regulated	
yafD	946286	UPF0294 protein yafD		Up Regulated	
ygaW	947147	Uncharacterized protein ygaW	[]	Down Regulated	
sppA	946281	Protease 4		Down Regulated	
nupG	946282	Nucleoside permease nupG		Down Regulated	
ygaU	947144	Uncharacterized protein ygaU	[]	Ambiguous/Unsorted	
trmA	947143	tRNA (uracil-5-)-methyltransferase		Temporarly Down Regulated	
yjaG	948501	Uncharacterized protein yjaG	[]	Down Regulated	
nfi	948502	Endonuclease V		Down Regulated	
proW	947145	Glycine betaine/L-proline transport system permease protein proW		Ambiguous/Unsorted	

purH	948503	Bifunctional purine biosynthesis protein purH		Down Regulated
ygiS	947140	Putative binding protein ygiS		Temporarly Down Regulated
purD	948504	Phosphoribosylamine--glycine ligase		Down Regulated
zraS	948506	Sensor protein; Sensor protein zraS		Ambiguous/Unsorted
ybjE	947142	Uncharacterized protein ybjE	[' Building block biosynthesis', 'metabolic process']	Temporarly Down Regulated
zraP	948507	Zinc resistance-associated protein		Temporarly Up Regulated
holC	948787	DNA polymerase III subunit chi		Down Regulated
yfcD	946783	Uncharacterized Nudix hydrolase yfcD	['tricarboxylic acid cycle', 'response to antibiotic']	Down Regulated
yqhG	945919	Uncharacterized protein yqhG	['Replication recombination and repair', ' Carbon compound utilization', 'DNA recombination']	Up Regulated
yccU	949008	Uncharacterized protein yccU	[]	Temporarly Up Regulated
folX	946781	D-erythro-7,8-dihydroneopterin triphosphate epimerase		Ambiguous/Unsorted
rfe	948789	Undecaprenyl-phosphate alpha-N-acetylglucosaminyl 1-phosphate transferase		Temporarly Down Regulated
rfaY	948145	Lipopolysaccharide core biosynthesis protein rfaY		Down Regulated
yajC	945374	UPF0092 membrane protein yajC		Down Regulated
rfaL	948148	O-antigen ligase		Down Regulated
rpsI	949000	30S ribosomal protein S9		Down Regulated
DeoB	948910	Phosphopentomutase		Temporarly Up Regulated
ybhA	945372	Phosphatase ybhA		Down Regulated
yfcI	946787	Uncharacterized protein yfcI	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid metabolic process', 'aromatic amino acid family	Up Regulated
radA	948912	DNA repair protein radA		Temporarly Up Regulated
mngR	945371	Mannosyl-D-glycerate transport/metabolism system repressor mngR		Ambiguous/Unsorted
intB	948782	ECDH10B_4464; ECIAI39_4743; UTI89_C4878; b4271; ECED1_5125; EC55989_4829; ECUMN_4803		Temporarly Up Regulated
nadR	948911	Transcriptional regulator nadR		Down Regulated
valS	948785	Valyl-tRNA synthetase		Down Regulated
serB	948913	Phosphoserine phosphatase		Temporarly Down Regulated
yfcH	946784	Epimerase family protein yfcH		Up Regulated
yeaG	946297	Uncharacterized protein yeaG	[]	Up Regulated
YigA	948359	Uncharacterized protein yigA		Down Regulated
recR	945100	Recombination protein recR		Down Regulated
yihA	948358	Probable GTP-binding protein engB		Down Regulated
yigB	948357	Uncharacterized protein yigB	[]	Down Regulated
ygaV	947136	Probable HTH-type transcriptional regulator ygaV		Up Regulated
tomB	945106	Uncharacterized protein ybaJ		Up Regulated
metA	948513	Homoserine O-succinyltransferase		Temporarly Up Regulated
yjaB	948514	Uncharacterized N-acetyltransferase yjaB	[]	Up Regulated
dnaX	945105	DNA polymerase III subunit tau		Down Regulated
polA	948356	DNA polymerase I		Down Regulated
ftsK	945102	DNA translocase ftsK		Temporarly Down Regulated
aceA	948517	Isocitrate lyase		Temporarly Up Regulated
pagB	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
yjbD	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
xerC	948355	Tyrosine recombinase xerC		Down Regulated
ybaB	945104	UPF0133 protein ybaB		Down Regulated
asr	945103	Acid shock protein		Temporarly Up Regulated
dsbA	948353	Thiol:disulfide interchange protein dsbA		Down Regulated
yicC	948154	UPF0701 protein yicC		Down Regulated
idnT	948798	Gnt-II system L-idonate transporter		Ambiguous/Unsorted
purF	946794	Amidophosphoribosyltransferase		Down Regulated
truA	946793	tRNA pseudouridine synthase A		Down Regulated
yjaH	948508	Uncharacterized protein yjaH	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Down Regulated
pyrE	948157	Orotate phosphoribosyltransferase		Down Regulated
ynaJ	945901	Uncharacterized protein ynaJ	['Replication recombination and repair', 'DNA recombination']	Temporarly Down Regulated
bioC	945388	Biotin synthesis protein bioC		Down Regulated
slmA	948158	HTH-type protein slmA		Temporarly Down Regulated
uspE	945904	Universal stress protein E		Temporarly Up Regulated
rph	948156	Ribonuclease PH		Temporarly Down Regulated
folK	948792	2-amino-4-hydroxy-6-hydroxymethyldihydropteridine pyrophosphokinase		Down Regulated
accD	946796	Acetyl-coenzyme A carboxylase carboxyl transferase subunit beta		Down Regulated
ydaM	945909	Uncharacterized protein ydaM		Up Regulated
uxuB	946795	D-mannonate oxidoreductase		Up Regulated
ybhJ	945380	Uncharacterized protein ybhJ	['Energy production and conversion', ' Energy metabolism carbon ', 'glycolysis', 'tricarboxylic acid cycle']	Up Regulated
deoC	948902	Deoxyribose-phosphate aldolase		Down Regulated
dedA	946798	Protein dedA		Down Regulated
deoA	948901	Thymidine phosphorylase		Down Regulated
tolQ	948900	Protein tolQ		Down Regulated
pheT	945382	Phenylalanyl-tRNA synthetase beta chain		Down Regulated
nuoG	946762	NADH-quinone oxidoreductase; NADH-quinone oxidoreductase subunit G		Down Regulated
ydcD	946958	Uncharacterized protein ydcD	['Cell wall membrane envelope biogenesis']	Up Regulated
CARA	949025	Carbamoyl-phosphate synthase small chain		Temporarly Up Regulated
yacL	944809	UPF0231 protein yacL		Temporarly Up Regulated
nuoA	946764	NADH-quinone oxidoreductase subunit; NADH-quinone oxidoreductase subunit A		Down Regulated
yehU	949027	Inner membrane protein yehU		Ambiguous/Unsorted
mutM	946765	Formamidopyrimidine-DNA glycosylase		Temporarly Up Regulated
idi	949020	Isopentenyl-diphosphate Delta-isomerase		Up Regulated

yfbS	946766	Uncharacterized transporter yfbS	[]	Temporarly Down Regulated
yfbU	946767	UPF0304 protein yfbU		Down Regulated
selD	946768	Selenide, water dikinase		Down Regulated
lrhA	946769	Probable HTH-type transcriptional regulator lrhA		Up Regulated
ftsL	944803	Cell division protein ftsL		Ambiguous/Unsorted
yicI	948169	Alpha-xylosidase		Temporarly Up Regulated
fruR	944804	Fructose repressor		Ambiguous/Unsorted
yfdC	944801	Inner membrane protein yfdC		Up Regulated
gltS	948166	Sodium/glutamate symport carrier protein		Ambiguous/Unsorted
ydfJ	944802	b4600; c1969; EcHS_A1633; Z2153; E2348C_1663; ECED1_1671; ECDH10B_1674; ECH74115_2159; EC55989_1684; ECS88_1623; EcE24377A_1752; EcSMS35_1621; ECED1_1674; E		Up Regulated
fkpB	944807	FKBP-type 16 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
nuoH	946761	NADH-quinone oxidoreductase subunit H		Down Regulated
recG	948162	ATP-dependent DNA helicase recG		Down Regulated
rpoZ	948160	DNA-directed RNA polymerase subunit omega		Temporarly Down Regulated
trmH	948161	tRNA guanosine-2'-O-methyltransferase		Temporarly Down Regulated
maeA	946031	NAD-dependent malic enzyme		Down Regulated
ydhF	946960	Oxidoreductase ydhF		Up Regulated
adhP	946036	Alcohol dehydrogenase, propanol-preferring		Temporarly Up Regulated
nuoC	946759	NADH-quinone oxidoreductase subunit C/D		Down Regulated
ackA	946775	Acetate kinase		Down Regulated
yfbV	946774	UPF0208 membrane protein yfbV		Up Regulated
ymdA	949012	Uncharacterized protein ymdA	[]	Down Regulated
yfbT	946777	Phosphatase yfbT		Down Regulated
pta	946778	Phosphate acetyltransferase		Down Regulated
yicN	948173	Uncharacterized protein yicN	[' Carbon compound utilization', 'regulation of transcription']	Temporarly Down Regulated
yicL	948176	Uncharacterized inner membrane transporter yicL	['regulation of cell shape']	Ambiguous/Unsorted
nlpA	948175	Lipoprotein 28		Down Regulated
ygfT	949018	Uncharacterized protein ygfT	['electron transport']	Temporarly Up Regulated
yicH	948171	Uncharacterized protein yicH	['Energy production and conversion']	Up Regulated
lspA	944800	Lipoprotein signal peptidase		Down Regulated
yfgD	946974	Uncharacterized protein yfgD	[]	Temporarly Down Regulated
rhsE	946026	ECDH10B_1586; EC55989_0238; b1456		Ambiguous/Unsorted
ymbA	946972	Uncharacterized lipoprotein ymbA	['Amino acid transport and metabolism']	Temporarly Up Regulated
uraA	946978	Uracil permease		Down Regulated
galS	949043	HTH-type transcriptional regulator galS		Temporarly Up Regulated
nuoE	946746	NADH-quinone oxidoreductase subunit E		Down Regulated
yeiB	949044	Uncharacterized protein yeiB	['two component signal transduction system phosphorelay ']	Down Regulated
yeiG	949045	S-formylglutathione hydrolase yeiG		Down Regulated
artQ	949046	Arginine transport system permease protein artQ		Down Regulated
dfp	949047	Coenzyme A biosynthesis bifunctional protein coaBC		Down Regulated
menE	946741	2-succinylbenzoate--CoA ligase		Temporarly Up Regulated
gltI	946938	Glutamate/aspartate periplasmic-binding protein		Temporarly Up Regulated
ftsQ	944823	Cell division protein ftsQ		Down Regulated
yadG	944833	Uncharacterized ABC transporter ATP-binding protein yadG		Down Regulated
can	944832	Carbonic anhydrase 2		Down Regulated
gnsb	946054	Protein gnsB		Down Regulated
secM	944831	Secretion monitor		Down Regulated
gcd	944830	Quinoprotein glucose dehydrogenase		Down Regulated
tmcA	946053	Uncharacterized protein ypfI		Ambiguous/Unsorted
ivbL	948181	IlvBN operon leader peptide		Temporarly Up Regulated
nuoB	946738	NADH-quinone oxidoreductase subunit B		Down Regulated
rpmB	946941	50S ribosomal protein L28		Down Regulated
yfaZ	946739	Uncharacterized protein yfaZ	[]	Temporarly Up Regulated
nuoI	946757	NADH-quinone oxidoreductase subunit I		Down Regulated
ubiX	949033	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Down Regulated
purE	949031	Phosphoribosylaminoimidazole carboxylase catalytic subunit		Down Regulated
yfcE	946755	Phosphodiesterase yfcE		Down Regulated
nuoJ	946756	NADH-quinone oxidoreductase subunit J		Down Regulated
nuoF	946753	NADH-quinone oxidoreductase subunit F		Down Regulated
yeiA	949037	Uncharacterized protein yeiA	['Nucleotide transport and metabolism']	Up Regulated
ppiB	949038	Peptidyl-prolyl cis-trans isomerase B; Peptidyl-prolyl cis-trans isomerase		Down Regulated
nadE	946946	NH(3)-dependent NAD(+) synthetase		Down Regulated
thyA	949035	Thymidylate synthase		Down Regulated
murD	944818	UDP-N-acetylmuramoylalanine--D-glutamate ligase		Down Regulated
surA	944812	Chaperone surA		Down Regulated
murF	944813	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine ligase		Down Regulated
mraY	944814	Phospho-N-acetylmuramoyl-pentapeptide-transferase		Down Regulated
wzzE	944815	Lipopolysaccharide biosynthesis protein wzzE		Down Regulated
uidC	944820	Membrane-associated protein uidC		Up Regulated
ddpB	946044	Probable D,D-dipeptide transport system permease protein ddpB		Down Regulated
secA	944821	Protein translocase subunit secA		Down Regulated
ibpB	948192	Small heat shock protein ibpB		Up Regulated
yidE	948193	Putative transport protein yidE		Up Regulated
ypfJ	946956	Uncharacterized protein ypfJ	[]	Temporarly Up Regulated

bamC	946954	Lipoprotein 34		Down Regulated
gcvR	946950	Glycine cleavage system transcriptional repressor		Temporarly Up Regulated
yebQ	946048	Uncharacterized transporter yebQ	[]	Temporarly Down Regulated
yfcN	944847	UPF0115 protein yfcN		Temporarly Down Regulated
ybgJ	945311	Uncharacterized protein ybgJ	[]	Down Regulated
sucC	945312	Succinyl-CoA ligase [ADP-forming] subunit beta		Down Regulated
yadB	944846	Glutamyl-Q tRNA(Asp) synthetase; Insertion element IS150 uncharacterized 14 kDa protein		Ambiguous/Unsorted
hrpB	944845	ATP-dependent RNA helicase hrpB		Temporarly Down Regulated
ybgK	945317	Uncharacterized protein ybgK	[]	Down Regulated
lpxA	944849	Acyl-[acyl-carrier-protein]--UDP-N-acetylglucosamine O-acyltransferase		Down Regulated
yjgR	948978	Uncharacterized protein yjgR	[]	Temporarly Up Regulated
rffD	948977	UDP-N-acetyl-D-mannosamine dehydrogenase		Down Regulated
glpQ	946725	Glycerophosphoryl diester phosphodiesterase		Temporarly Up Regulated
pinR	948973	Putative DNA-invertase from lambdoid prophage Rac		Up Regulated
coaE	949060	Dephospho-CoA kinase		Up Regulated
clcA	946715	H(+)/Cl(-) exchange transporter clcA		Down Regulated
dksA	944850	DnaK suppressor protein		Temporarly Up Regulated
sucB	945307	Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex		Down Regulated
hisJ	945309	Histidine-binding periplasmic protein		Temporarly Down Regulated
lpd	944854	Dihydrolipoyl dehydrogenase		Down Regulated
HtpX	946076	Probable protease htpX		Ambiguous/Unsorted
ydhC	946077	Inner membrane transport protein ydhC		Down Regulated
rnhB	944852	Ribonuclease HII		Down Regulated
aceE	944834	Pyruvate dehydrogenase E1 component		Down Regulated
lptG	945324	Lipopolysaccharide export system permease protein lptG		Ambiguous/Unsorted
sdhD	945322	Succinate dehydrogenase hydrophobic membrane anchor subunit		Down Regulated
panB	944839	3-methyl-2-oxobutanoate hydroxymethyltransferase		Down Regulated
tolR	945328	Protein tolR		Down Regulated
yjhQ	949059	Uncharacterized N-acetyltransferase yjhQ	['Translation ribosomal structure and biogenesis', 'translation']	Up Regulated
csgA	949055	Major curlin subunit		Up Regulated
glpC	946735	Anaerobic glycerol-3-phosphate dehydrogenase subunit C		Up Regulated
trxB	949054	Thioredoxin reductase		Down Regulated
menC	946734	o-succinylbenzoate synthase		Down Regulated
lpxH	949053	UDP-2,3-diacylglucosamine hydrolase		Down Regulated
lrp	949051	Leucine-responsive regulatory protein		Down Regulated
cydD	949052	ATP-binding/permease protein cydD		Down Regulated
rluE	945701	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase E		Down Regulated
hipA	946064	Protein hipA		Temporarly Up Regulated
ygbL	947197	Putative aldolase class 2 protein ygbL		Temporarly Up Regulated
manA	944840	Mannose-6-phosphate isomerase		Temporarly Down Regulated
ybgL	945318	UPF0271 protein ybgL		Down Regulated
pphB	947196	Serine/threonine-protein phosphatase 2		Temporarly Up Regulated
ygbK	947199	Uncharacterized protein ygbK	['Carbohydrate transport and metabolism']	Up Regulated
ydeJ	946067	Protein ydeJ		Up Regulated
yacH	944868	Uncharacterized protein yacH	['Signal transduction mechanisms', ' Type of regulation', 'signal transduction']	Up Regulated
argP	944867	Chromosome initiation inhibitor		Ambiguous/Unsorted
caiB	948997	Crotonobetainyl-CoA:carnitine CoA-transferase		Up Regulated
eco	946700	Ecotin		Down Regulated
symE	949088	Endoribonuclease symE		Up Regulated
ymdB	946987	UPF0189 protein ymdB		Ambiguous/Unsorted
bamB	946982	Lipoprotein yfgL		Down Regulated
der	946983	GTP-binding protein engA		Down Regulated
yfgJ	946984	Uncharacterized protein yfgJ	[' Type of regulation']	Ambiguous/Unsorted
cdsA	944876	Phosphatidate cytidylyltransferase		Temporarly Down Regulated
dnaE	944877	DNA polymerase III subunit alpha		Down Regulated
yfgG	946980	Uncharacterized protein yfgG	['Nucleotide transport and metabolism']	Up Regulated
yfgM	946981	UPF0070 protein yfgM		Down Regulated
yaeR	944875	Uncharacterized protein yaeR	[]	Ambiguous/Unsorted
glnH	944872	Glutamine-binding periplasmic protein		Down Regulated
flhE	946094	Flagellar protein flhE		Down Regulated
prc	946096	Tail-specific protease		Down Regulated
bamA	944870	Outer membrane protein assembly factor yaeT		Down Regulated
rseP	944871	Regulator of sigma E protease		Down Regulated
ynfN	946097	Uncharacterized protein ynfN	[]	Up Regulated
osmE	945305	Osmotically-inducible lipoprotein E		Temporarly Up Regulated
sucA	945303	2-oxoglutarate dehydrogenase E1 component		Down Regulated
ulaF	948711	L-ribulose-5-phosphate 4-epimerase ulaF		Up Regulated
aer	945301	Aerotaxis receptor		Up Regulated
erpA	944857	Iron-sulfur cluster insertion protein erpA		Up Regulated
yjfY	948713	Uncharacterized protein yjfY	[]	Temporarly Up Regulated
kdpE	945302	KDP operon transcriptional regulatory protein kdpE		Temporarly Up Regulated
yciM	944858	Uncharacterized protein yciM	[]	Ambiguous/Unsorted
glpA	946713	Anaerobic glycerol-3-phosphate dehydrogenase subunit A		Up Regulated
menF	946712	Menaquinone-specific isochorismate synthase		Ambiguous/Unsorted

sbcC	949076	Nuclease sbcCD subunit C		Down Regulated
apbE	946711	Thiamine biosynthesis lipoprotein apbE		Temporarly Down Regulated
lolA	948989	Outer-membrane lipoprotein carrier protein		Down Regulated
betA	945716	Choline dehydrogenase		Down Regulated
xdhD	949079	Probable hypoxanthine oxidase xdhD		Up Regulated
flgH	946996	Flagellar L-ring protein		Down Regulated
sseA	946993	3-mercaptopyruvate sulfurtransferase		Temporarly Up Regulated
glpT	946704	Glycerol-3-phosphate transporter		Up Regulated
sseB	946994	Protein sseB		Down Regulated
ulaR	948706	HTH-type transcriptional regulator ulaR		Up Regulated
rodZ	946992	Cytoskeleton protein rodZ		Temporarly Down Regulated
acnB	944864	Aconitate hydratase 2		Down Regulated
yjfP	948707	Esterase yjfP		Ambiguous/Unsorted
yjfN	948709	Uncharacterized protein yjfN	[' Building block biosynthesis', 'ion transport']	Up Regulated
tsf	944866	Elongation factor Ts		Down Regulated
pinQ	946088	Putative DNA-invertase from lambdoid prophage Qin		Up Regulated
yebR	946086	UPF0067 protein yebR		Down Regulated
skp	944861	Chaperone protein skp		Down Regulated
dcp	946084	Peptidyl-dipeptidase dcp		Ambiguous/Unsorted
fabZ	944888	(3R)-hydroxymyristoyl-[acyl-carrier-protein] dehydratase		Down Regulated
yhfY	947888	Uncharacterized protein yhfY	['Replication recombination and repair', ' Carbon compound utilization']	Temporarly Up Regulated
yhfX	947889	Uncharacterized protein yhfX	['Replication recombination and repair', ' Carbon compound utilization']	Up Regulated
lpxD	944882	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase		Down Regulated
map	947882	Methionine aminopeptidase		Ambiguous/Unsorted
DHAR	945743	PTS-dependent dihydroxyacetone kinase operon regulatory protein		Up Regulated
yjiX	949090	Uncharacterized protein yjiX	['Signal transduction mechanisms', ' Adaptation to stress', 'response to stress']	Down Regulated
cysG	947880	Siroheme synthase		Down Regulated
umuD	945746	Protein umuD		Up Regulated
minE	945740	Cell division topological specificity factor		Down Regulated
kdsB	945539	3-deoxy-manno-octulosonate cytidylyltransferase		Down Regulated
folM	949096	Dihydrofolate reductase folM		Temporarly Up Regulated
hupB	949095	DNA-binding protein HU-beta		Ambiguous/Unsorted
rbfA	947685	Ribosome-binding factor A		Down Regulated
ycbC	945546	Uncharacterized protein ycbC	['regulation of cell shape', 'peptidoglycan biosynthetic process']	Ambiguous/Unsorted
infB	947684	Translation initiation factor IF-2		Down Regulated
arnA	947683	Bifunctional polymyxin resistance protein arnA		Up Regulated
mukF	945548	Chromosome partition protein mukF		Down Regulated
nusA	947682	Transcription elongation protein nusA		Down Regulated
smtA	945547	Protein smtA		Down Regulated
uxaB	945542	Altronate oxidoreductase		Up Regulated
ycbB	945541	Uncharacterized protein ycbB	['DNA replication']	Temporarly Up Regulated
rimP	947680	b3170		Down Regulated
yegX	945543	Uncharacterized protein yegX	['translation']	Up Regulated
nuoL	945540	NADH-quinone oxidoreductase subunit L		Down Regulated
rlmE	947689	b3179		Down Regulated
yhbY	947688	RNA-binding protein yhbY		Down Regulated
truB	947687	tRNA pseudouridine synthase B		Down Regulated
sufD	944878	Protein sufD		Up Regulated
rpsO	947686	30S ribosomal protein S15		Down Regulated
PabA	947873	Para-aminobenzoate synthase glutamine amidotransferase component II		Ambiguous/Unsorted
metQ	944893	D-methionine-binding lipoprotein metQ		Down Regulated
rpsB	947874	30S ribosomal protein S2		Down Regulated
accA	944895	Acetyl-coenzyme A carboxylase carboxyl transferase subunit alpha		Down Regulated
yejH	945529	Uncharacterized protein yejH	[' Building block biosynthesis', 'amino acid biosynthetic process']	Temporarly Down Regulated
serC	945527	Phosphoserine aminotransferase		Down Regulated
pnp	947672	Polyribonucleotide nucleotidyltransferase		Down Regulated
yhbQ	947671	UPF0213 protein yhbQ		Up Regulated
deaD	947674	Cold-shock DEAD box protein A		Down Regulated
cmk	945535	Cytidylate kinase		Temporarly Down Regulated
nlpI	947673	Lipoprotein nlpI		Temporarly Down Regulated
ihfB	945533	Integration host factor subunit beta		Down Regulated
ycaI	945531	Uncharacterized protein ycaI	[]	Up Regulated
rssA	945725	NTE family protein rssA		Temporarly Down Regulated
mtr	947675	Tryptophan-specific transport protein		Temporarly Up Regulated
yhbW	947677	Uncharacterized protein yhbW	[]	Down Regulated
ymgE	945760	UPF0410 protein ymge		Up Regulated
clpA	945764	ATP-dependent Clp protease ATP-binding subunit clpA		Temporarly Up Regulated
pth	945765	Peptidyl-tRNA hydrolase		Ambiguous/Unsorted
fabD	945766	Malonyl CoA-acyl carrier protein transacylase		Down Regulated
ycgV	945767	Uncharacterized protein ycgV	['Amino acid transport and metabolism', ' Building block biosynthesis']	Up Regulated
trpB	945768	Tryptophan synthase beta chain		Down Regulated
rlmL	945564	Ribosomal RNA large subunit methyltransferase L		Down Regulated
gst	945758	Glutathione S-transferase		Up Regulated
ycbX	945563	Uncharacterized protein ycbX	[]	Temporarly Down Regulated

rmf	945567	Ribosome modulation factor		Temporarly Up Regulated
gph	947895	Phosphoglycolate phosphatase		Down Regulated
rpe	947896	Ribulose-phosphate 3-epimerase		Down Regulated
yhfZ	947897	Uncharacterized protein yhfZ	['Replication recombination and repair', ' Carbon compound utilization', 'DNA replication']	Up Regulated
dadA	945752	D-amino acid dehydrogenase small subunit		Temporarly Down Regulated
sufB	945753	Protein sufB		Temporarly Up Regulated
mukB	945549	Chromosome partition protein mukB		Down Regulated
ldcA	945756	Muramoyltetrapeptide carboxypeptidase		Temporarly Down Regulated
treA	945757	Periplasmic trehalase; Putative periplasmic trehalase		Up Regulated
dam	947893	DNA adenine methylase		Down Regulated
trpS	947894	Tryptophanyl-tRNA synthetase		Down Regulated
ompF	945554	Outer membrane protein F		Down Regulated
dhaM	945749	PTS-dependent dihydroxyacetone kinase, phosphotransferase subunit dhaM		Down Regulated
dhaL	945748	PTS-dependent dihydroxyacetone kinase, ADP-binding subunit dhaL		Down Regulated
glmM	947692	Phosphoglucosamine mutase		Down Regulated
aspC	945553	Aspartate aminotransferase		Down Regulated
folP	947691	Dihydropteroate synthase		Down Regulated
ycbW	945552	Uncharacterized protein ycbW	['Nucleotide transport and metabolism', ' Building block biosynthesis']	Ambiguous/Unsorted
dhaK	945747	PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit dhaK		Down Regulated
dacB	947693	D-alanyl-D-alanine carboxypeptidase dacB		Down Regulated
ybaN	945558	Inner membrane protein ybaN		Down Regulated
greA	947696	Transcription elongation factor; Transcription elongation factor greA		Down Regulated
yhdJ	947695	Uncharacterized adenine-specific methylase yhdJ		Up Regulated
yhbE	947699	Uncharacterized inner membrane transporter yhbE	[' Type of regulation']	Down Regulated
ycbL	945551	Uncharacterized protein ycbL	[]	Temporarly Down Regulated
mukE	945550	Chromosome partition protein mukE		Down Regulated
pyrC	945787	Dihydroorotase		Down Regulated
yjiM	945789	Uncharacterized protein yjiM	[]	Up Regulated
ychA	945784	Protein sirB1		Down Regulated
yeeO	946506	Uncharacterized transporter yeeO	[]	Temporarly Up Regulated
hisF	946516	Imidazole glycerol phosphate synthase subunit hisF		Down Regulated
agaA	947646	ECED1_3799; EC55989_3555; E2348C_3421; ECUMN_3619; ECIAI1_3285; ECDH10B_3308; ECIAI39_3636; b3135; ECS88_3523		Ambiguous/Unsorted
garP	947642	Probable galactarate transporter		Temporarly Up Regulated
yeeR	946512	Inner membrane protein yeeR		Down Regulated
dmsC	945502	Anaerobic dimethyl sulfoxide reductase chain C		Up Regulated
rihA	945503	Pyrimidine-specific ribonucleoside hydrolase rihA		Down Regulated
cydC	945504	ATP-binding/permease protein cydC		Temporarly Up Regulated
grxB	946926	Glutaredoxin-2		Temporarly Up Regulated
yfiH	947089	UPF0124 protein yfiH		Down Regulated
hemA	945777	Glutamyl-tRNA reductase		Temporarly Down Regulated
ycgM	946115	Uncharacterized protein ycgM	[]	Ambiguous/Unsorted
aroF	947084	Phospho-2-dehydro-3-deoxyheptonate aldolase, Tyr-sensitive		Down Regulated
lolB	945775	Outer-membrane lipoprotein lolB		Down Regulated
ispE	945774	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase		Down Regulated
bamD	947086	UPF0169 lipoprotein yfiO		Down Regulated
agp	945773	Glucose-1-phosphatase		Up Regulated
prs	945772	Ribose-phosphate pyrophosphokinase		Down Regulated
rluD	947087	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase D		Ambiguous/Unsorted
cysB	945771	HTH-type transcriptional regulator cysB		Ambiguous/Unsorted
ychM	945770	Putative sulfate transporter ychM		Ambiguous/Unsorted
agaR	947636	Putative aga operon transcriptional repressor		Up Regulated
yhaV	947638	Uncharacterized protein yhaV		Up Regulated
cbl	946502	HTH-type transcriptional regulator cbl		Down Regulated
nac	946501	Nitrogen assimilation regulatory protein nac		Down Regulated
efeB	946500	Peroxidase ycdB		Down Regulated
pheA	947081	P-protein		Down Regulated
pheL	947080	Phe operon leader peptide		Up Regulated
yfeZ	946918	Inner membrane protein yfeZ		Down Regulated
uxuA	947082	Mannonate dehydratase		Temporarly Up Regulated
ypeA	946917	Acetyltransferase ypeA		Down Regulated
bisC	946915	Biotin sulfoxide reductase		Down Regulated
yfeX	946913	Uncharacterized protein yfeX	[' Building block biosynthesis']	Temporarly Down Regulated
pflA	945517	Pyruvate formate-lyase 1-activating enzyme		Temporarly Up Regulated
ypjD	947098	Inner membrane protein ypjD		Down Regulated
trpC	945519	Tryptophan biosynthesis protein trpCF		Down Regulated
rspB	946127	Starvation-sensing protein rspB		Up Regulated
rplS	947096	50S ribosomal protein L19		Down Regulated
sufC	946128	Probable ATP-dependent transporter sufC		Temporarly Up Regulated
trmD	947099	tRNA (guanine-N(1)-)-methyltransferase		Down Regulated
ydhK	946528	Uncharacterized transporter ydhK	[' Type of regulation']	Temporarly Down Regulated
sbcB	946529	Exodeoxyribonuclease I		Temporarly Down Regulated
hisD	946531	Histidinol dehydrogenase		Temporarly Up Regulated
yraL	947664	UPF0011 protein yraL		Ambiguous/Unsorted
rsmI	947664	UPF0011 protein yraL		Ambiguous/Unsorted

yadE	946536	Uncharacterized protein yadE	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Up Regulated
yraQ	947668	UPF0718 protein yraQ		Up Regulated
yajO	946903	Uncharacterized oxidoreductase yajO	[]	Temporarly Up Regulated
ycaK	945520	Uncharacterized NAD(P)H oxidoreductase ycaK	['amino acid transport']	Up Regulated
yajG	945521	Uncharacterized lipoprotein yajG	['Posttranslational modification protein turnover chaperones', ' Electrochemical potential driven transporters']	Down Regulated
yraN	947662	UPF0102 protein yraN		Down Regulated
yraM	947663	Uncharacterized protein yraM	['DNA replication']	Down Regulated
ivy	946530	Inhibitor of vertebrate lysozyme		Temporarly Up Regulated
ycaP	945525	UPF0702 transmembrane protein ycaP		Ambiguous/Unsorted
hcr	947660	NADH oxidoreductase hcr		Up Regulated
diaA	947661	DnaA initiator-associating protein diaA		Down Regulated
rsxC	946137	Electron transport complex protein rnfC		Down Regulated
rhmT	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yfaV	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yafS	944903	Uncharacterized protein yafS	['DNA replication']	Down Regulated
serS	945506	Seryl-tRNA synthetase		Temporarly Down Regulated
rarA	945505	Replication-associated recombination protein A		Down Regulated
ychN	945794	Protein ychN		Temporarly Up Regulated
dkgB	944901	2,5-diketo-D-gluconic acid reductase B		Up Regulated
yafJ	944906	Putative glutamine amidotransferase yafJ		Ambiguous/Unsorted
queA	944905	S-adenosylmethionine:tRNA ribosyltransferase-isomerase		Down Regulated
cobU	946519	Bifunctional adenosylcobalamin biosynthesis protein cobU		Up Regulated
ynfD	946133	Uncharacterized protein ynfD	['Energy production and conversion', ' Electrochemical potential driven transporters', 'response to stress']	Up Regulated
rsxD	946134	Electron transport complex protein rnfD		Down Regulated
chaB	945792	Cation transport regulator chaB		Temporarly Up Regulated
chaA	945790	Calcium/proton antiporter		Down Regulated
poxB	946132	Pyruvate dehydrogenase [cytochrome]		Up Regulated
mreC	947655	Rod shape-determining protein mreC		Down Regulated
hisA	946521	1-(5-phosphoribosyl)-5-[(5-phosphoribosylamino)methylideneamino] imidazole-4-carboxamide isomerase		Down Regulated
cobS	946520	Cobalamin synthase		Temporarly Up Regulated
yraJ	947656	Uncharacterized outer membrane usher protein yraJ	['Amino acid transport and metabolism', 'Coenzyme transport and metabolism', ' Central intermediary metabolism', 'translation']	Up Regulated
yeeE	946526	UPF0394 inner membrane protein yeeE		Down Regulated
yraH	947658	Uncharacterized fimbrial-like protein yraH	[]	Up Regulated
hslJ	946525	Heat shock protein hslJ		Temporarly Up Regulated
yafK	944910	Uncharacterized protein yafK	[]	Temporarly Down Regulated
ycaD	945515	Uncharacterized MFS-type transporter ycaD	['translation']	Temporarly Up Regulated
yhgE	947651	Uncharacterized protein yhgE	[]	Temporarly Up Regulated
focA	945513	Type-1 fimbrial protein, C chain; Probable formate transporter 1		Temporarly Down Regulated
hisC	946551	Histidinol-phosphate aminotransferase		Down Regulated
hisB	946552	Histidine biosynthesis bifunctional protein hisB		Down Regulated
mutL	948691	DNA mismatch repair protein mutL		Temporarly Down Regulated
yjeT	948696	Uncharacterized protein yjeT	['Posttranslational modification protein turnover chaperones', 'purine nucleotide biosynthetic process']	Temporarly Down Regulated
rplJ	948490	50S ribosomal protein L10		Down Regulated
hflK	948698	Protein hflK		Down Regulated
yjfC	948699	Uncharacterized protein yjfC	['electron transport', 'metabolic process']	Up Regulated
exuT	947601	Hexuronate transporter		Up Regulated
rplE	947800	50S ribosomal protein L5		Down Regulated
rpsN	947801	30S ribosomal protein S14		Down Regulated
rpsH	947802	30S ribosomal protein S8		Down Regulated
umuC	946359	Protein umuC		Up Regulated
rplF	947803	50S ribosomal protein L6		Down Regulated
ptrB	946358	Protease 2		Ambiguous/Unsorted
yoaB	946357	UPF0076 protein yoaB		Down Regulated
pphA	946356	Serine/threonine-protein phosphatase 1		Up Regulated
cdh	948410	CDP-diacylglycerol pyrophosphatase		Temporarly Down Regulated
pdxJ	947039	Pyridoxine 5'-phosphate synthase		Temporarly Down Regulated
pdxA	944919	4-hydroxythreonine-4-phosphate dehydrogenase		Down Regulated
cyoD	944918	Cytochrome o ubiquinol oxidase protein cyoD		Down Regulated
yebW	946354	Uncharacterized protein yebW	[]	Up Regulated
queC	947034	Queuosine biosynthesis protein queC		Up Regulated
pfkA	948412	6-phosphofructokinase; 6-phosphofructokinase isozyme 1		Down Regulated
fieF	948413	Ferrous-iron efflux pump fieF		Temporarly Down Regulated
fpr	948414	Ferredoxin--NADP reductase		Temporarly Down Regulated
uspD	948415	Universal stress protein D		Temporarly Up Regulated
yiiS	948416	UPF0381 protein yiiS		Temporarly Up Regulated
hemE	948497	Uroporphyrinogen decarboxylase		Down Regulated
yebO	946350	Uncharacterized protein yebO	[]	Down Regulated
yiiR	948417	Uncharacterized protein yiiR	['Amino acid transport and metabolism', ' Building block biosynthesis']	Up Regulated
hupA	948499	DNA-binding protein HU-alpha		Down Regulated
menA	948418	1,4-dihydroxy-2-naphthoate octaprenyltransferase		Down Regulated
nudC	948498	NADH pyrophosphatase		Ambiguous/Unsorted
yafQ	944911	Uncharacterized protein yafQ		Up Regulated
flu	946540	Antigen 43		Down Regulated
frdC	948680	Fumarate reductase subunit C		Temporarly Up Regulated

zapA	947404	Cell division protein zapA		Temporarly Up Regulated
yeeX	946541	UPF0265 protein yeeX		Ambiguous/Unsorted
hfq	948689	Protein hfq		Down Regulated
sbmC	946546	DNA gyrase inhibitory protein		Temporarly Up Regulated
hisL	946547	His operon leader peptide		Ambiguous/Unsorted
hflX	948688	GTP-binding protein hflX		Down Regulated
hisG	946549	ATP phosphoribosyltransferase		Down Regulated
hisH	946544	Imidazole glycerol phosphate synthase subunit hisH		Down Regulated
yeeA	946545	Inner membrane protein yeeA		Up Regulated
ygbJ	947200	Uncharacterized oxidoreductase ygbJ	[]	Up Regulated
rpmI	946349	50S ribosomal protein L35		Down Regulated
rsmF	946348	Ribosomal RNA small subunit methyltransferase F		Temporarly Down Regulated
rplL	948489	50S ribosomal protein L7/L12		Down Regulated
yeeD	946539	UPF0033 protein yeeD		Temporarly Up Regulated
dsbB	946344	Disulfide bond formation protein B		Down Regulated
yebV	946347	Uncharacterized protein yebV	['Replication recombination and repair']	Up Regulated
yoaH	946346	UPF0181 protein yoaH		Down Regulated
yfiC	947047	ECED1_3006; c3099; E2348C_2852; ECIAI1_2689; APECO1_3956; ECS88_2749; ECDH10B_2743; ECUMN_2898; ECIAI39_2780; UTI89_C2897; EC55989_2864; pC15-1a_066; Z3857; b2		Ambiguous/Unsorted
rplK	948484	50S ribosomal protein L11		Down Regulated
rplA	948483	50S ribosomal protein L1		Down Regulated
rlmA	946340	b1822		Ambiguous/Unsorted
cpxR	948404	Transcriptional regulatory protein cpxR		Down Regulated
yobD	946343	UPF0266 membrane protein yobD		Down Regulated
rhtA	947045	Inner membrane transporter rhtA		Temporarly Up Regulated
ygbM	947207	Protein ygbM		Temporarly Up Regulated
manZ	946342	Mannose permease IID component		Temporarly Up Regulated
rpoB	948488	DNA-directed RNA polymerase subunit beta		Down Regulated
bolA	947043	Protein bolA		Temporarly Up Regulated
dinB	944922	DNA polymerase IV		Ambiguous/Unsorted
nusG	948485	Transcription antitermination protein nusG		Temporarly Down Regulated
yiiM	948406	Protein yiiM		Down Regulated
lepB	947040	Signal peptidase I		Down Regulated
pgk	947414	Phosphoglycerate kinase		Down Regulated
mscS	947416	Small-conductance mechanosensitive channel		Down Regulated
cpsG	946574	Phosphomannomutase		Temporarly Down Regulated
fbaA	947415	Fructose-bisphosphate aldolase class 2		Down Regulated
ugd	946571	UDP-glucose 6-dehydrogenase		Temporarly Up Regulated
argO	947418	Arginine exporter protein argO		Up Regulated
rpoE	947050	RNA polymerase sigma factor; RNA polymerase sigma-E factor		Up Regulated
rplD	947818	50S ribosomal protein L4		Down Regulated
rplC	947817	50S ribosomal protein L3		Down Regulated
yggF	947410	Uncharacterized protein yggF	['Replication recombination and repair', ' Central intermediary metabolism', 'DNA recombination']	Temporarly Down Regulated
yhaH	947617	Inner membrane protein yhaH		Temporarly Up Regulated
hslU	948430	ATP-dependent hsl protease ATP-binding subunit hslU		Down Regulated
yebC	946379	UPF0082 protein yebC		Down Regulated
ruvC	946378	Crossover junction endodeoxyribonuclease ruvC		Down Regulated
rplB	947820	50S ribosomal protein L2		Down Regulated
metF	948432	Methylenetetrahydrofolate reductase; 5,10-methylenetetrahydrofolate reductase		Temporarly Up Regulated
surE	947211	Multifunctional protein surE		Down Regulated
yciS	944936	Inner membrane protein yciS		Down Regulated
ruvB	946371	Holliday junction ATP-dependent DNA helicase ruvB		Temporarly Down Regulated
truD	947214	tRNA pseudouridine synthase D		Down Regulated
rseB	947054	Sigma-E factor regulatory protein rseB		Temporarly Down Regulated
rseA	947053	Sigma-E factor negative regulatory protein		Ambiguous/Unsorted
metB	948434	Cystathionine gamma-synthase		Down Regulated
znuA	946375	High-affinity zinc uptake system protein znuA		Ambiguous/Unsorted
ydeA	947218	UPF0401 protein yubL; Probable sugar efflux transporter; Sugar efflux transporter		Up Regulated
metJ	948435	Met repressor		Temporarly Up Regulated
srmB	947055	ATP-dependent RNA helicase srmB		Down Regulated
rsmA	944939	b0051		Down Regulated
cysN	947219	Sulfate adenylyltransferase subunit 1		Down Regulated
yciH	947058	Uncharacterized protein yciH	['Translation ribosomal structure and biogenesis', 'translation']	Down Regulated
nagE	945292	PTS system N-acetylglucosamine-specific EIICBA component		Up Regulated
ycfQ	947425	Uncharacterized HTH-type transcriptional regulator ycfQ	[]	Up Regulated
FldA	945293	Flavodoxin-1		Down Regulated
rdgB	947429	Nucleoside-triphosphatase; Nucleoside-triphosphatase rdgB		Down Regulated
insE	944952	Transposase insE for insertion sequence IS3A/B/C/D/E/fA/fB; Transposase insE for insertion sequence IS3		Up Regulated
fur	945295	Ferric uptake regulation protein		Ambiguous/Unsorted
entE	947426	Enterobactin synthetase component E		Temporarly Up Regulated
ybaO	945091	Uncharacterized HTH-type transcriptional regulator ybaO	[' Metabolism of other compounds']	Up Regulated
rpmC	947807	50S ribosomal protein L29		Down Regulated
rplP	947806	50S ribosomal protein L16		Down Regulated
rpmJ	947805	50S ribosomal protein L36 2; 50S ribosomal protein L36; 50S ribosomal protein L36 1		Down Regulated
yegH	946566	UPF0053 protein yegH		Ambiguous/Unsorted

rplR	947804	50S ribosomal protein L18		Down Regulated
murR	946568	b2427		Down Regulated
tktA	947420	Transketolase 1		Down Regulated
rplN	947809	50S ribosomal protein L14		Down Regulated
rpsQ	947808	30S ribosomal protein S17		Down Regulated
marA	947613	Multiple antibiotic resistance protein marA		Up Regulated
yqjF	947608	Inner membrane protein yqjF		Up Regulated
eda	946367	KHG/KDPG aldolase		Down Regulated
glpF	948422	Glycerol uptake facilitator protein		Up Regulated
zapB	948420	Cell division protein zapB		Up Regulated
purT	946368	Phosphoribosylglycinamide formyltransferase 2		Down Regulated
rplV	947813	50S ribosomal protein L22		Down Regulated
rpsC	947814	30S ribosomal protein S3		Down Regulated
rpsS	947811	30S ribosomal protein S19		Down Regulated
cysC	947221	Adenylyl-sulfate kinase		Down Regulated
hslV	948429	ATP-dependent protease hslV		Down Regulated
eamB	947065	Cysteine/O-acetylserine efflux protein		Temporarly Up Regulated
ybgF	947227	Uncharacterized protein ybgF		Down Regulated
cytR	948427	HTH-type transcriptional repressor cytR		Down Regulated
exoX	946361	Exodeoxyribonuclease 10		Down Regulated
selU	947063	tRNA 2-selenouridine synthase		Up Regulated
maa	945096	Maltose O-acetyltransferase		Up Regulated
pagP	946360	Protein crcA		Up Regulated
kgtP	947069	Alpha-ketoglutarate permease		Temporarly Up Regulated
yebF	946363	Protein yebF		Up Regulated
adk	945097	Adenylate kinase		Down Regulated
edd	946362	Phosphogluconate dehydratase		Temporarly Down Regulated
hha	945098	Hemolysin expression-modulating protein		Up Regulated
yfiD	947068	Autonomous glycyl radical cofactor		Temporarly Down Regulated
insF	944948	Transposase insF for insertion sequence IS3A/B/C/D/E/fA		Up Regulated
ung	947067	Uracil-DNA glycosylase		Down Regulated
htpG	945099	Chaperone protein htpG		Down Regulated
glpK	948423	Glycerol kinase		Up Regulated
yebG	946364	Uncharacterized protein yebG	['Translation ribosomal structure and biogenesis', 'Replication recombination and repair']	Up Regulated
glpX	948424	Fructose-1,6-bisphosphatase class 2		Temporarly Up Regulated
yfiF	947066	Uncharacterized tRNA/rRNA methyltransferase yfiF	[]	Down Regulated
speA	947432	Biosynthetic arginine decarboxylase; Arginine decarboxylase		Down Regulated
vacJ	945582	Lipoprotein vacJ		Down Regulated
mlaA	945582	Lipoprotein vacJ		Down Regulated
CHIA	947837	Probable bifunctional chitinase/lysozyme		Up Regulated
mpaA	945969	Protein mpaA		Up Regulated
tufA	947838	Elongation factor Tu 2; Elongation factor Tu; Elongation factor Tu 1		Down Regulated
bfr	947839	Bacterioferritin		Up Regulated
cyoA	945080	Ubiquinol oxidase subunit 2		Down Regulated
yfaL	946595	Uncharacterized protein yfaL		Up Regulated
dtpA	947436	Tripeptide permease tppB		Ambiguous/Unsorted
tppB	947436	Tripeptide permease tppB		Ambiguous/Unsorted
cof	945089	HMP-PP phosphatase		Ambiguous/Unsorted
mdlB	945088	Multidrug resistance-like ATP-binding protein mdlB		Temporarly Down Regulated
glnK	945087	Nitrogen regulatory protein P-II 2		Down Regulated
yijO	948451	Uncharacterized HTH-type transcriptional regulator yijO	[' RNA related', ' Type of regulation', ' Genetic unit regulated', 'regulation of transcription DNA dependent']	Down Regulated
lon	945085	ATP-dependent protease La		Ambiguous/Unsorted
clpX	945083	ATP-dependent Clp protease ATP-binding subunit clpX		Ambiguous/Unsorted
argC	948455	N-acetyl-gamma-glutamyl-phosphate reductase		Temporarly Down Regulated
ykgA	944956	UTI89_C0322; ECS88_0301; APECO1_1693; E2348C_0262; c0416; ECIAI39_0385; ECIAI1_0298; ECUMN_0338; b0300; EC55989_0303; Z0376; ECDH10B_0289		Ambiguous/Unsorted
ycfJ	945977	Uncharacterized protein ycfJ	[]	Temporarly Up Regulated
argE	948456	Acetylornithine deacetylase		Down Regulated
ydcU	945976	Inner membrane ABC transporter permease protein ydcU		Temporarly Up Regulated
rpmG	946318	50S ribosomal protein L33		Down Regulated
ppc	948457	Phosphoenolpyruvate carboxylase		Down Regulated
fusA	947847	Elongation factor G		Down Regulated
yijP	948458	E2348C_4267; ECUMN_4486; ECED1_4660; b3955; ECDH10B_4143; ECIAI1_4163; EC55989_4437; Z5513; ECS88_4410; UTI89_C4546; c4914; ECIAI39_3034		Down Regulated
rpsG	947846	30S ribosomal protein S7		Down Regulated
yeaQ	946311	UPF0410 protein yeaQ		Temporarly Up Regulated
yeaY	946312	Uncharacterized lipoprotein yeaY	['Cell wall membrane envelope biogenesis', 'metabolic process']	Up Regulated
yqgE	947442	UPF0301 protein yqgE		Down Regulated
ompA	945571	Outer membrane protein A		Temporarly Up Regulated
cusS	945978	Sensor kinase cusS; Sensor protein		Down Regulated
rplM	947828	50S ribosomal protein L13		Down Regulated
ydbK	946587	Probable pyruvate-flavodoxin oxidoreductase		Up Regulated
tehB	945979	Tellurite resistance protein tehB		Temporarly Down Regulated
gspB	947826	Protein pioO		Ambiguous/Unsorted
hspQ	945578	Heat shock protein hspQ		Temporarly Up Regulated
asmA	946582	Protein asmA		Down Regulated

trmI	947448	tRNA (guanine-N(7)-)-methyltransferase		Up Regulated
mgsA	945574	Methylglyoxal synthase		Ambiguous/Unsorted
yggW	947446	Oxygen-independent coproporphyrinogen-III oxidase-like protein yggW		Down Regulated
mutY	947447	A/G-specific adenine glycosylase		Down Regulated
scpA	945576	Protein sbm		Up Regulated
gshB	947445	Glutathione synthetase		Temporarly Down Regulated
iscU	947002	NifU-like protein		Temporarly Up Regulated
LeuC	945076	3-isopropylmalate dehydratase large subunit		Down Regulated
gldA	948440	Glycerol dehydrogenase		Ambiguous/Unsorted
puuC	947003	Gamma-glutamyl-gamma-aminobutyraldehyde dehydrogenase		Down Regulated
ydbC	945980	Putative oxidoreductase ydbC		Ambiguous/Unsorted
hcaR	947000	Hca operon transcriptional activator		Down Regulated
yccS	947001	Inner membrane protein yccS		Down Regulated
puuB	945072	Gamma-glutamylputrescine oxidoreductase		Down Regulated
clpS	948443	ATP-dependent Clp protease adapter protein clpS		Up Regulated
ompX	944967	Outer membrane protein X		Up Regulated
yahN	944968	Uncharacterized membrane protein yahN		Up Regulated
tesB	945074	Acyl-CoA thioesterase 2		Temporarly Up Regulated
yahM	944969	Uncharacterized protein yahM	[]	Temporarly Up Regulated
emrE	948442	Multidrug transporter emrE		Up Regulated
cyoE	945073	Protoheme IX farnesyltransferase		Down Regulated
ydcA	945986	Uncharacterized protein ydcA	['Energy production and conversion', ' Energy production transport', ' Macromolecules cellular constituent biosynthesis', 'electro	Up Regulated
yoaA	946305	Probable ATP-dependent helicase yoaA		Down Regulated
yhcN	947835	Uncharacterized protein yhcN	['Transcription', ' Building block biosynthesis', ' RNA related', ' Type of regulation', 'DNA recombination', 'transcription', 'regulation	Up Regulated
thiB	946306	Thiamine-binding periplasmic protein		Temporarly Up Regulated
hemX	948446	Putative uroporphyrinogen-III C-methyltransferase		Down Regulated
yeaL	946307	Uncharacterized protein yeaL	[]	Temporarly Down Regulated
flgA	946300	Flagella basal body P-ring formation protein flgA		Down Regulated
mipA	946301	MltA-interacting protein		Down Regulated
ydeM	945981	Anaerobic sulfatase-maturating enzyme homolog ydeM		Up Regulated
iscS	947004	Cysteine desulfurase		Ambiguous/Unsorted
yeaE	946302	Uncharacterized protein yeaE		Temporarly Down Regulated
ydfK	947451	Uncharacterized protein ydfK	[]	Up Regulated
yggN	947453	Uncharacterized protein yggN	[' Central intermediary metabolism']	Ambiguous/Unsorted
solA	944983	N-methyl-L-tryptophan oxidase		Down Regulated
flgJ	947456	Peptidoglycan hydrolase flgJ		Down Regulated
betI	944981	HTH-type transcriptional regulator betI		Up Regulated
prpR	944987	Propionate catabolism operon regulatory protein		Up Regulated
frmR	944986	Transcriptional repressor frmR		Down Regulated
ycdX	948477	Putative hydrolase ycdX		Down Regulated
sdaA	946331	L-serine dehydratase 1		Up Regulated
murB	948470	UDP-N-acetylenolpyruvoylglucosamine reductase		Down Regulated
manY	946332	Mannose permease IIC component		Temporarly Down Regulated
yncJ	945990	Uncharacterized protein yncJ	[]	Ambiguous/Unsorted
qseE	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
glrK	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
panE	945065	2-dehydropantoate 2-reductase		Up Regulated
yebY	947014	Uncharacterized protein yebY	['translation']	Down Regulated
nudL	946330	Uncharacterized Nudix hydrolase nudL		Up Regulated
yoaE	946335	UPF0053 inner membrane protein yoaE		Temporarly Down Regulated
yheU	947863	UPF0270 protein yheU		Temporarly Down Regulated
trg	945995	Methyl-accepting chemotaxis protein III		Up Regulated
glnB	947016	Nitrogen regulatory protein P-II 1		Ambiguous/Unsorted
xseB	945069	Exodeoxyribonuclease 7 small subunit		Ambiguous/Unsorted
degS	947865	Protease degS		Down Regulated
pepT	946333	Peptidase T		Ambiguous/Unsorted
argD	947864	Succinylornithine transaminase; Acetylornithine/succinyldiaminopimelate aminotransferase		Ambiguous/Unsorted
manX	946334	PTS system mannose-specific EIIAB component		Ambiguous/Unsorted
cspC	946339	Cold shock-like protein cspC		Down Regulated
crp	947867	Catabolite gene activator		Temporarly Down Regulated
rimL	945998	Ribosomal-protein-serine acetyltransferase		Up Regulated
coaA	948479	Pantothenate kinase		Temporarly Down Regulated
ydcH	945997	Uncharacterized protein ydcH	[' Channel type Transporters']	Temporarly Up Regulated
tsgA	947869	Protein tsgA		Ambiguous/Unsorted
yobF	946338	Uncharacterized protein yobF	[' RNA related', ' Type of regulation', ' Adaptation to stress', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
yhdH	947848	Putative quinone oxidoreductase yhdH		Temporarly Up Regulated
slyX	947849	Protein slyX		Temporarly Up Regulated
yqgA	947462	Uncharacterized protein yqgA	[]	Up Regulated
prpB	944990	Methylisocitrate lyase		Up Regulated
torS	945595	Sensor protein torS; Sensor protein		Temporarly Down Regulated
frmB	944991	S-formylglutathione hydrolase frmB		Temporarly Down Regulated
cbpM	945597	Chaperone modulatory protein cbpM		Up Regulated
codB	944994	Cytosine permease		Down Regulated
glcC	947466	Glc operon transcriptional activator		Temporarly Up Regulated

proY	945050	Proline-specific permease proY		Temporarly Down Regulated	
frmA	944988	S-(hydroxymethyl)glutathione dehydrogenase		Down Regulated	
argH	948463	Argininosuccinate lyase		Ambiguous/Unsorted	
sthA	948461	Soluble pyridine nucleotide transhydrogenase		Down Regulated	
nusB	945054	N utilization substance protein B homolog; N utilization substance protein B		Down Regulated	
oxyR	948462	Hydrogen peroxide-inducible genes activator		Temporarly Down Regulated	
glyA	947022	Serine hydroxymethyltransferase		Down Regulated	
yphH	947023	Uncharacterized protein yphH	['Carbohydrate transport and metabolism', 'Transcription', 'carbohydrate metabolic process']	Ambiguous/Unsorted	
murG	946321	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase		Down Regulated	
mdh	947854	Malate dehydrogenase		Ambiguous/Unsorted	
ftsW	946322	Cell division protein ftsW		Temporarly Down Regulated	
yajR	945058	Inner membrane transport protein yajR		Up Regulated	
ddlB	946324	D-alanine--D-alanine ligase B		Down Regulated	
yheO	947851	Uncharacterized protein yheO	['protein folding']	Down Regulated	
yfhR	945059	Uncharacterized protein yfhR	[]	Ambiguous/Unsorted	
kefG	947857	Glutathione-regulated potassium-efflux system ancillary protein kefG		Up Regulated	
yheS	947856	Uncharacterized ABC transporter ATP-binding protein yheS	[]	Temporarly Down Regulated	
rnd	946328	Ribonuclease D		Ambiguous/Unsorted	